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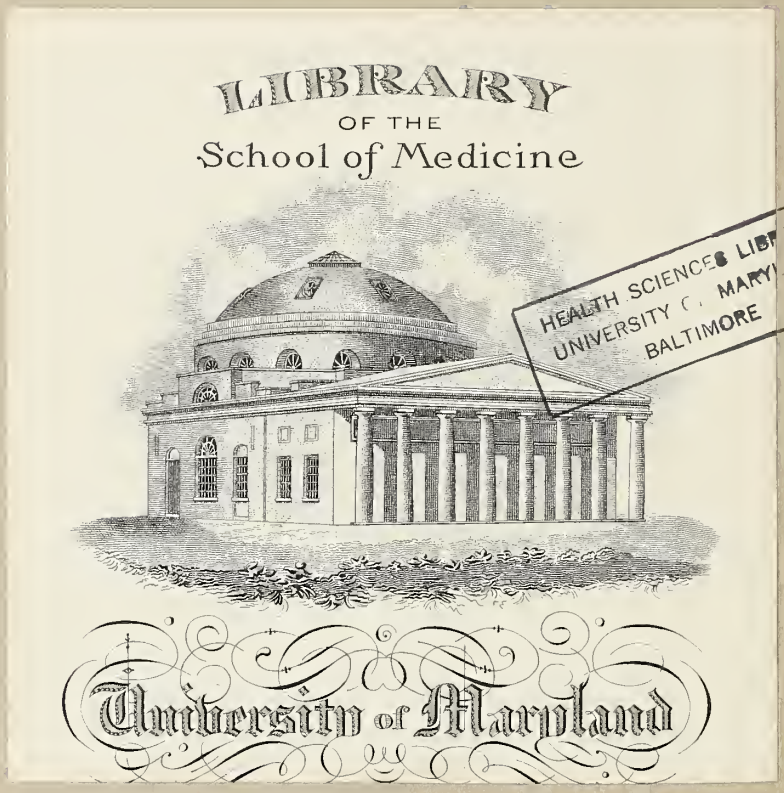

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Modern Use of Urinary Antiseptics

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SUMMARY

It is not necessary to resort to complete study in most cases of urinary tract infection. However, if the lesion is chronic or recurrent, associated with mixed organisms, complicated by lower tract involvement, accompanied by low total renal function, with or without abnormalities in a kidney-ureter-bladder x-ray film or in an intravenous urogram, then complete retrograde study should be carried out.

A Gram stain will substitute for culture in most simple urinary tract infections and a trial of the agent of choice will act as a test of bacterial sensitivity. If the infection persists, however, more adequate bacteriologic studies are required.

For good chemotherapeutic practice, it is important to: (1) Withhold the drug until it has been determined that obstruction, stone or other such lesion is not present; (2) watch for side effects and toxicity; and (3) give the best drug in large enough dosage for an adequate period of time.

NOW that there are at hand chemotherapeutic agents potent against specific bacteria and techniques are available for identification of the infecting organism and determining the site of infection, it would seem possible to reduce the treatment of infectious disease of the urinary tract to a simple formula such as: Patient × bacterium = chemotherapeutic agent.

But the inconvenience and expense of complete urologic and bacteriologic study prevent its application in most cases, and the variability of the reaction of host to organism and of organism to agent make direct application of a formula impractical. However, by evaluating each of these variables in turn it is possible to arrive at a rational plan for everyday therapy in urinary tract infections.

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Read before the Joint Meeting of the Sections on General Practice and Urology at the 80th Annual Meeting of the California Medical Association, Los Angeles, May 13 to 16, 1951.

THE PATIENT

At some point in the examination of a patient, the physician must decide upon either immediate trial of chemotherapy on a symptomatic basis to be followed by more complete study if the treatment is ineffective, or more or less complete urologic study.

Certain non-instrumental steps have been found very useful in arriving at presumptive evidence for or against simple infection which would respond to a suitable agent.[26] As noted in Table 1, a history of chronic or recurrent infection, the presence of mixed organisms in the urine, the detection of associated lower tract disease, the palpation of a renal mass, the determination of decreased renal function by phenosulfonphthalein (PSP) test, and the visualization of abnormalities on the kidney-ureter-bladder x-ray film or in an intravenous urogram, make retrograde study necessary. In addition, diabetes for example would, if uncontrolled, make cure of the infection very hard. And it must be remembered that poor renal function, as indicated by inadequate PSP

TABLE 1.—*Appraisal of Diagnostic Data in Determining Treatment of Disease of the Urinary Tract*

Presumptive Diagnostic Steps	Indications for: Simple Antibiotic Therapy	Indications for: Further Urologic Study (Usually retrograde study)
1. History and 2. Physical examination	Acute, non-recurrent, uncomplicated	Chronic, recurrent, complicated
3. Urine	Single organism	Mixed organisms or leukocytes only or erythrocytes or tubercle bacilli
4. External genitalia	Normal	Urethritis or epididymitis
5. Rectal examination	Normal prostate gland	Enlargement of prostate gland or prostatitis
6. Renal palpation	No mass	Mass
7. Renal function (PSP)	Normal	Depressed
8. Kidney-ureter-bladder film and intravenous urography	Normal	Stone, dilation or deformity
And Trial of Antibiotic Therapy	Success	Failure

excretion, prevents good concentration of the agent by the kidneys.

After trial of a selected agent in a presumably simple case without clearing of the infection, instrumental diagnostic steps are necessary since the failure must be interpreted as evidence of the presence of complicating abnormalities; conversely, structural abnormality of the urinary tract prevents effectiveness of antibacterial agents.

Use of the non-instrumental, presumptive steps is more valuable than bacterial identification or measurement of the sensitivity of the organism to chemical agents.

THE ORGANISM

Relatively few kinds of organisms are observed in cases of urinary infection. Rods may be assumed to be B. coli-aerogenes, and cocci probably staphylococci if instruments or catheters have not been used. After operation or instrumentation, Proteus and Pseudomonas (B. pyocyaneus) may be found in addition among the rods, and streptococcus fecalis (enterococcus) among the cocci.[49] It is obvious, therefore, that a routine methylene blue smear is adequate for bacterial identification in most cases. The exceptions would be in prolonged, stubborn infections which do not respond to simple chemotherapy. In such cases culture, and often determination of sensitivity is necessary. It is cheaper and easier to give even a relatively expensive agent for a short time on trial than it is to send a specimen for culture.

At the risk of repeating the obvious, the importance of the proper collection of the specimen must be stressed. A specimen obtained during a remission is of little value. A specimen is best obtained by the physician himself so that he can be sure contamination is eliminated. For men, a three-glass specimen, and for women a catheterized specimen, is essential. After centrifugation, the number of leukocytes (and erythrocytes) is estimated. Often when a slide is being examined for this purpose, motile bacteria may be observed if the light from the substage is reduced. Whether these are seen or not, the slide is air-dried, fixed by heat, stained with triple-strength methylene blue, and examined under the oil immersion lens for rods or cocci.

This technique of the direct smear should be carried out in every case, whether a culture is to be obtained or not. It has the advantages of giving the results immediately, without the possibility of contamination or overgrowth, and establishes at once the number of organisms. It is cheap and convenient, and hence invaluable for clinical work. Culture, on the other hand, while inconvenient and relatively expensive, will positively identify the organism, and will allow sensitivity tests if they are needed. The use of the pour plate avoids overgrowth and permits accurate estimation of the degree of infection. Culture is valuable in determination of the treatment in complicated cases. Sensitivity tests are less often used, and should be reserved for cases which are chronic, recurrent or severe.

Determination of the pH of the urine will help identify the resistant urea-splitting organisms, such as Pseudomonas, staphylococcus and alkaligenes, and will also suggest acidification as part of the treatment.

THE AGENT

The new drugs derived from molds in the last few years finally permit treating urinary tract infections rationally and with expectation of success. However, some of the older compounds are of value in certain cases and for special reasons.

Methenamine, with acidifying agents, can be given intermittently for long periods without toxicity at relatively low cost. It, and methenamine mandelate,[56] are especially useful in long-standing infections in which permanent sterilization cannot be expected because an obstruction, stone, or catheter cannot be eliminated.

The sulfonamides,[57] while comparatively toxic and often less effective than the newer antibiotics, are still of value in treating urologic disease because of their low cost and ease of administration. They might not be used if immediate sterilization was desired, but are a useful adjunct to therapy after prostatectomy and for prophylaxis for cystoscopy and retrograde study. Gantrisin® [7, 8, 32, 39, 55, 58, 59, 60, 68] is promising in B. coli and Proteus infections.

The true antibiotics which are clinically useful may be separated into three groups:

1. Penicillin, still the best agent for its particular purpose, is non-toxic and indicated in coccal infections. It acts against growing cells (bacteriocidal). If it were used in doses comparable to those in which the other antibiotics are given, it would be even more effective.

2. Streptomycin and dihydrostreptomycin,[3,18,62,69] because of the common occurrence of bacterial resistance to them, are now less and less frequently used except for tuberculosis. They act by inhibiting an enzyme involved in the carbohydrate metabolism of the cell (bacteriostatic). They may have a place in sterilization of the bowel when given orally, and in the treatment of severe infections which have not responded to other agents.

3. Aureomycin,[2, 6, 10, 50, 51, 70] chloramphenicol[9,19,24,25] and Terramycin®[4,34,40,53] are similar in antibacterial and other properties.[41] In fact, it may be that chloramphenicol (which has been synthesized) is merely an active portion of the large Terramycin molecule. Because of their low toxicity and wide range of effect, and in spite of their cost, these drugs increasingly supplant the other agents in daily use against urinary tract infections. They are also useful for preoperative bowel preparation.[11,12,13,14] Polymyxin,[47, 54] while somewhat toxic, may prove useful in resistant infections.[23, 30] Neomycin[43, 65, 66] may be too toxic for clinical use, although some of the toxic reactions are reversible.[29] Neomycin, which is similar in action to streptomycin, is of use instead of that drug in Pseudomonas or in resistant-coli infections. The author agrees, however, with Hayes[23] that the "use of a drug known to be toxic seems to be justified until such a time as a less toxic effective drug is available."

Aside from availability and cost, the selection of an antibacterial agent will depend on its actions against the host as well as against the organism responsible for the disease. Certain fundamental principles control these actions:

Absorption and Excretion

Dosage requirements depend on the rate of absorption and excretion, as well as on the rate of inactivation and the extent of binding of the agent to the plasma proteins. The sulfonamides, for example, are well absorbed orally but are excreted rapidly by the kidneys, hence must be given every four to six hours (0.5 gm. to 1.0 gm.) to maintain adequate levels. Penicillin, in contrast, is poorly absorbed orally and is destroyed in the gastrointestinal tract. Given intramuscularly, it produces a high blood level with rapid renal excretion. More useful is the daily or twice daily administration of procaine penicillin in aqueous solution (300,000 units),[46] with added crystalline penicillin for its immediate effect, which gives prolonged adequate blood levels. In urologic practice, a tubular blocking agent such as carinamide is not given because often it is desirable to have a high concentration of the drug in the urine. Besides, as penicillin is not expensive or particularly toxic, it can be given in large doses without the necessity of blocking tubular excretion.

Streptomycin is neither absorbed from nor destroyed by the gastrointestinal tract, which makes oral administration of it practical for sterilization of the bowel before transplantation of the ureters. When streptomycin is given intramuscularly, the level in the blood falls due to renal excretion, but at a slower rate than penicillin, so that doses (0.25 to 0.5 gm.) may be spaced at six to eight hour intervals. One gram may even be given once daily. Aureomycin,[20, 48, 52] chloromycetin, and Terramycin are readily absorbed when given by mouth, and are not destroyed by digestive activity. Part is excreted by the kidney but most is destroyed by the body. Doses of 0.25 to 1 gm. every six hours give satisfactory levels. Polymyxin is given intramuscularly or intravenously in doses of less than 4 mg. per kilogram of body weight.

A question of fundamental importance to the urologist has yet to be answered: Should one aim at an effective tissue dose or merely at an effective urinary dose? The urinary dose is easily reached because of tubular concentration of the drug. At one extreme are the chronic low-grade infections associated with urinary stasis (vesical diverticulum, atonic bladder, advanced hydronephrosis). These should be treated with urinary levels of drug, and for them the older, slow-acting compounds (methenamine, mandelic acid) may be effective. At the other extreme are the fulminating renal infections, clinically and pathologically parenchymal, and so best treated by tissue levels of the antibiotic. Between these poles lie the majority of urinary tract infections. It is probably better to lean toward the higher, tissue level, especially in the trying cases of chronic pyelonephritis.

Toxicity

The principal limiting factor in the use of chemotherapeutic agents is toxicity, which may be either dose-related or due to sensitivity. With sulfonamides, for example, both forms may occur. Crystalluria and toxic nephrosis[22, 38] are principally dosage phenomena and can be avoided by limiting the quantity of drug administered or by changing the pH, whereas fever, leukopenia, and skin rash are sensitivity reactions, occurring after even small doses if the drug has been given before. Late effects include periarteritis nodosum, but this is a rare complication in the author's experience. The "triple-sulfa" preparations were designed to avoid dose-related toxicity by providing smaller amounts of the individual drugs. However, the chance for toxicity from sensitization is thereby increased. In addition, the physician will be restricted in changing to another sulfonamide, since the clinically valuable ones are included in the combinations.

Methenamine and mandelic acid are relatively non-toxic. However, if the former drug is given over a long period of time, irritation of the uroepithelium with hematuria may occur. Both drugs, especially when given with acidifying substances, may be poorly tolerated by the stomach.

Penicillin may be given in very large doses (it

TABLE 2.—*Values and Limitations of Various Chemotherapeutic*

	Methenamine with Ammonium Nitrate	Mandelic Acid & Mandelamine	Sulfadiazine, etc. Gantrisin®	Penicillin
Toxicity or side effects	Low, occasional gastritis or cysto-urethritis	Low	a. Crystalluria b. Toxic nephrosis	Low (sensitivity)
Resistance	Unknown	Unknown	Rare	Rare
Absorption	Complete	Complete	Good	Good
Excretion	Complete, effective only in urine of pH5 or less	Complete	Moderate rate (acetylation)	Rapid rate
Synergism	Unknown	Unknown	?, with methylene blue	Adversely with chloromycetin and streptomycin
Dose in grams and average duration of treatment	1 QID × 6+	.75 QID × 6+	0.5—1 QID × 5	400,000 u. × 6
Approximate cost per day, dollars	.25	.30	.12 - .44	1.30
Total average cost, dollars	1.50	1.80	.60 - 2.20	7.80
Uses	Chronic infection with stone or retention	Chronic infection with stone or retention	General use, relatively cheap	Coccal infections

is still not administered in doses comparable to those for aureomycin, etc.) without dose-related toxic effects. But in one patient in 20, rash, hives or fever appear, representing sensitivity phenomena.[67] Streptomycin, in contrast, does not produce sensitization, but has pronounced toxic effects upon the eighth nerve and kidneys related to both dosage and duration of treatment. Dihydrostreptomycin, however, is somewhat less toxic.

Aureomycin[35, 42] and chloramphenicol are fairly non-toxic. Nausea and vomiting may occur with aureomycin from gastric irritation. Aluminum gels, administered to prevent this, act by adsorbing the drug. Milk, however, is effective. Terramycin causes diarrhea[5] and transient nausea only.[15] Polymyxin has dose-related toxic effects upon the kidneys and the central nervous system, which usually clear, however, after cessation of therapy. Neomycin has dose-related ototoxicity and nephrotoxicity,[64] which limits its clinical use.

Most of these antibiotics alter the bacterial flora of the bowel, with great diminution in vitamin absorption,[17] but these effects are not prolonged.[1] Monilia may take over when the normal flora have been so depleted, resulting in distressing proctitis.

Synergism

The purposes of using combinations of drugs are: (1) to attain rapid control of the infection, (2) to decrease the development of resistance, (3) to decrease dose-related toxicity, and (4) to prevent superimposition of infection.[16, 44, 45] Clinically, drug combinations are indicated for fulminating infections, infection by relatively resistant organisms, chronic or recurrent infections, acute infections in which the expected response is not obtained within 48 hours, and of course in mixed infections.

The mechanisms through which drug synergy is obtained are poorly understood. Sulfathiazole has been shown to be potentiated by methylene blue, presumably by an effect on cell respiration. Cobalt experimentally enhances the effect of penicillin, but this finding as yet has no clinical significance. Streptomycin has been found to remove strains which would be able to adapt themselves to sulfonamides administered simultaneously. However, Jawetz and co-workers recently reported that chloramphenicol plus penicillin is less effective against streptococci than either drug alone.[21, 27, 28] In theory, effective synergy is possible between drugs because, as each apparently affects a specific metabolic route in the organism, the combination can block the alternative, adaptive route by which the bacterium would establish resistance by mutation.[31, 61]

An aspect of synergism is demonstrated in the attempts to achieve prophylaxis against infection by drug administration. In repressing bacteria of one kind, a drug may thereby reduce normal ecologic restraints upon other, previously inhibited bacteria, permitting them to multiply and become pathogenic. A similar disturbance of balance has been noted in mixed infections when streptomycin eradicates the rod forms and leaves the resistant cocci to spread. Another objection to the use of drugs prophylactically is that they usually are given in such small doses that organisms have a chance to develop resistance. Recent work by Marshall[37] demonstrated the futility of such practice for infections associated with prostatectomy. However, with a single exposure to introduction of infection, as with urethral instrumentation, prophylactic chemotherapy may be worth while, especially in patients with valvular heart disease.[33]

Agents in Treatment of Urinary Tract Infections

Streptomycin Dihydrostreptomycin	Aureomycin	Chloramphenicol	Terramycin
8th nerve and kidney	Nausea and vomiting; diarrhea and proctitis; rash	Nausea and vomiting; diarrhea and proctitis; rash (aplastic anemia)	Nausea and vomiting; diarrhea and proctitis; rash
Common	Not usual	Not usual	Not usual
Complete except orally	Complete	Complete	Complete
Moderate rate, best effect in alkaline urine	Moderate rate, acid urine	Moderate rate, acid urine	Moderate rate, acid urine
Adversely with penicillin	Not known	Not known	Not known
0.5 Q6H × 3	0.25 Q6H × 5+	0.25 Q6H × 5+	0.25 Q6H × 5+
4.00	2.50	2.50	2.50
12.00	12.50	12.50	12.50
Resistant organisms, without obstruction or stone	General, bacillary infections	General, bacillary infections	General bacillary infections

Resistance

Antiseptics act grossly by coagulating the cell membrane (of the host as well as the bacterium), whereas the antibiotics affect cellular protein anabolism of growing organisms, often in a highly specific manner,[36] giving them a high chemotherapeutic ratio, measured by the degree of parasitotropism over organotropism. Correspondingly, since these agents act only on metabolism, it is very difficult to distinguish bacteriostatic from bacteriocidal actions. The usual action of antibiotic agents is inhibitory in lower concentrations and lethal in higher ones.

Some species or strains are naturally resistant, having metabolic pathways that are not affected by the drug. In interesting contrast is streptomycin to which few species are primarily insensitive. However, this is a disadvantage, since this substance destroys the normal, sensitive flora and permits growth of resistant species and strains.

Other strains may become resistant during exposure to the drug, due to the development, through mutation, of alternative metabolic pathways. This can be circumvented in part by giving enough drug to eliminate all organisms at once, or by using several drugs which affect different cellular functions to eliminate the chance of simultaneous mutation. Voureka[63] noted bizarre bacterial forms in culture of urine after the urine appeared sterile with chloramphenicol therapy. Some of these non-pathogenic variants bred true in subculture, but eventually returned to normal. He felt that the injury to the cell by the agent caused genic change and hence mutation. Of course, these mutants may be the cause of relapses.

Probably of greater importance in recurrent urinary tract infection, especially with an obstructive element, is reinfection from organisms in the bowel[31] or reintroduced from the urethra and bladder.

PRACTICAL APPLICATIONS

Since the practicing physician cannot keep in mind at all times the many published facts as to the value and limitations of each antibiotic, the data have been assembled in Tables 2 and 3. Such tabulations have inherent limitations of course. First, often it is impractical or uneconomic to exactly identify the organism. Second, strains of the same organism vary in susceptibility; or a second organism may enter. Third, more experience with the newer drugs may change present concepts of specific uses of them. And lastly, effectiveness of a specific drug may be severely limited by associated lesions of the urinary tract, as for example, obstruction or stone.

Certain bacterial infections are treated best by certain agents. Examples are: penicillin for coccal infections (excepting streptococcus fecalis); Terramycin for Pseudomonas infections; and chloramphenicol for Proteus. Less certain is the superiority of aureomycin for aerobacter infections, but these generalizations may be of some help in choosing the best drug.

For practical purposes, the majority of patients who need treatment for infection in the urinary tract fall into the following categories:

1. *Cystitis with simple pyelonephritis*, especially in the female. Gram-negative organisms, usually B. coli, are the pathogenic agents and sulfadiazine or Gantrisin is usually effective. If not, use of aureomycin, chloramphenicol, or Terramycin, although more expensive, is indicated. If these drugs are ineffective, further study and instrumental therapy are needed.

TABLE 3.—*Effectiveness of Various Sulfa Drugs and Antibiotics Against Organisms Causing Disease of the Urinary Tract*

Organism	Methenamine or Mandelamine	Sulfadiazine Sulfamerazine	Gantrisin	Procaine Penicillin	Streptomycin Dihydrostreptomycin	Aureomycin	Chloramphenicol	Terramycin
Bacillus coli	+	++	++	±	++	++	++	++
Aerobacter aerogenes	+	+	+	±	+	* ++	+	++
Pseudomonas aeruginosa (B. pyocyaneus)	0	±	+	0	±	±	±	* +
Proteus vulgaris	0	±	* +	0	+	±	* +	0
Staphylococcus	±	+	±	* +++	+	++	+	++
Streptococcus fecalis	±	±	±	+	0	++	* ++	++

+++ Usually curative or suppressive (in over 75%)
(Unless strain is resistant or abnormality of urinary tract is present)
++ Often curative or suppressive (in 50-75%)
+ Occasionally curative or suppressive (in 25-50%)
± Seldom curative or suppressive (in less than 25%)
0 Ineffective
* Drug of choice

2. *Recurrent (chronic) pyelonephritis* may be caused by any of the common organisms. After obstructive or calculous disease are ruled out, culture and determination of the sensitivity of the organism are carried out, and chemotherapy begun accordingly. A general rule is to over-treat.

3. *Prophylactic chemotherapy* in preparation for retention catheterization or for prostatectomy is ineffective. The invasive infection is treated if it occurs.

4. *Postoperative chemotherapy.* Depending on Gram stain reaction, postoperative infection should be treated fully with the drug of choice (from Table 3). After prostatectomy, urinary sterilization ought not be attempted until discharge of blood and pus has cleared.

5. *Fulminating renal infection.* Treatment should be started with the apparent drug of choice (from Table 3). If the drug fails, urine and blood culture should be carried out for determination of sensitivity.

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REFERENCES

1. Bierman, H. R. and Jawetz, E.: The effect of prolonged administration of antibiotics on the human fecal flora, J. Lab. & Clin. Med., 37:394-401, March 1951.

2. Bryer, M. S., Schoenbach, E. B., Chandler, C. A., Bliss, E. A., Long, P. H.: Aureomycin; experimental and clinical investigations, J.A.M.A., 138:117-119, Sept. 11, 1948.

3. Buxton, P. H. and others: Streptomycin in non-tuberculous infections, Lancet, 1:729-733, April 30, 1949.

4. Caldwell, E. R. Jr. and others: The treatment of various infections with Terramycin, J. Lab. & Clin. Med., 36:747-753, Nov. 1950.

5. Carroll, G.: (In discussion of Nesbit, 1951[40]).

6. Carroll, G., and others: Aureomycin: a clinical and laboratory study of its effect in urinary infections, J. Urol., 62: 574-580, Oct. 1949.

7. Carroll, G., and others: Gantrisin: an in vivo and in vitro study in urinary infections, Urol. & Cutan. Rev., 53:677-683, Nov. 1949.

8. Carroll, G., and others: Gantrisin in the treatment of urinary infections, J.A.M.A., 142:85-86, Jan. 14, 1950.

9. Chittenden, G. E., and others: The treatment of bacillary urinary infections with chloromycetin, J. Urol., 62:771-790, Nov. 1949.

10. Collins, H. S. and Finland, M.: Aureomycin treatment of urinary tract infections, Surg., Gynec. & Obst., 89:43-48, July 1949.

11. Dearing, W. H. and Heilman, F. R.: Aureomycin in the preparation of the intestine for surgery, Surg., Gynec. & Obst., 91:757-758, Dec. 1950.

12. Dearing, W. H. and Heilman, F. R.: The effect of aureomycin on the bacterial flora of the intestinal tract of man: a contribution to preoperative preparation, Mayo Clin., Staff Meet. Proc., 25:87-102, Feb. 15, 1950.

13. Dearing, W. H. and Needham, G. M.: The effect of Terramycin on the intestinal bacterial flora of patients being prepared for intestinal surgery, Mayo Clin., Staff Meet. Proc., 26:49-52, Jan. 31, 1951.

14. DiCaprio, J. M. and Rantz, L. A.: Effect of Terramycin on the bacterial flora of the bowel in man, Arch. Int. Med., 86:649-657, Nov. 1950.

15. Douglas, R. G., and others: Terramycin in urinary tract infections, Calif. Med., 73:463-465, Dec. 1950.

16. El Borolossy, A. W. and Buttle, G. A. H.: The combined effect of penicillin and of sulphonamides in infections with gram-negative organisms, J. Pharmacy & Pharmacol., 2:152-161, March 1950.

17. Ellinger, P. and Shattock, F. M.: Nicotinamide deficiency after oral administration of penicillin, Brit. M. J., 2:611-613, Oct. 26, 1946.

18. Flandin, Ch. et al.: Essais de traitement des colibacilloses urinaires par la streptomycine, Soc. Méd. Hop. Par., Bull. et Mém., 65:749-750, 1949.

19. Garvey, F. K., and others: Chloramphenicol in bacillary infections of the urinary tract, Southern M. J., 43:85-90, Feb. 1950.

20. Gocke, T. M., and others: Blood levels and urinary excretion of aureomycin after intravenous and intramuscular administration, J. Lab. & Clin. Med., 36:100-112, July 1950.

21. Gunnison, J. D., Coleman, V. R. and Jawetz, E.: Interference of aureomycin and Terramycin with action of penicillin in vitro, Proc. Soc. Exper. Biol. & Med., 75:549, Nov 1950.

22. Haunz, E. A., and others: Agranulocytosis due to Gantrisin, J.A.M.A., 144:1179-1181, Dec. 2, 1950.

23. Hayes, E. R. and Yow, E.: Meningitis due to Ps. aeruginosa treated with polymyxin B, Am. J. Med. Sci., 220:633, Dec. 1950.

24. Herrold, R. D. and Boand, A. V.: Indications for aureomycin and chloromycetin in urinary infections, J. Urol., 64: 618-621, Oct. 1950.

25. Hewitt, W. L. and Williams, B. Jr.: Chloromycetin (chloramphenicol) in treatment of infections, New Eng. J. Med., 242:119-127, Jan. 26, 1950.

26. Hinman, F. Jr.: The use of antibiotics in urology, Ann. West. Med. & Surg., 4:829-833, Dec. 1950.

27. Jawetz, E., Gunnison, J. B. and Coleman, V. R.: The combined action of penicillin with streptomycin or chloromycetin on enterococci in vitro, Science, 111:254-256, March 10, 1950.

28. Jawetz, E., and others: Studies on antibiotic synergism and antagonism; the interference of chloramphenicol with the action of penicillin, Arch. Int. Med., 87:349-359, March 1951.

29. Kadison, E. R., Volini, I. F., Hoffman, S. J. and Felsenfeld, O.: Neomycin therapy: its use in virus pneumonia, tuberculosis, and diseases caused by gram-negative bacteria, J.A.M.A., 145: 1307, April 28, 1951.

30. Kagan, B. M., and others: Polymyxin B and polymyxin E; clinical and laboratory studies, J. Lab. & Clin. Med., 37:402-414, March 1951.

31. Kimmelman, L. J., Zinsser, H. H. and Klein, M.: Effect of combined therapy on emergence of drug resistant bacteria in urinary tract infections: observations on origin of resistant strains, J. Urol., 65:668-680, April 1951.

32. Lazarus, J. A. and Schwarz, L. H.: A clinical study of a new sulfonamide (NU-445) in the treatment of urinary tract infections, J. Urol., 61:649-657, March 1949.

33. Lichtman, P. A. and Master, A. M.: Penicillin prophylaxis of post-operative bacteremia and bacterial endocarditis, M. Ann. District of Columbia, 19:663, Dec. 1950.

34. Linsell, W. D. and Fletcher, A. P.: Laboratory and clinical experience with Terramycin hydrochloride, Brit. M. J., 2:1190-1195, Nov. 25, 1950.

35. Long, P. H., and others: The experimental and clinical use of polymyxin, chloromycetin, and aureomycin, Calif. Med., 70:157-166, March 1949.

36. Loomis, W. F.: On the mechanism of action of aureomycin, Science, 111:474, April 28, 1950.

37. Marshall, M. Jr.: Evaluation of febrile responses following prostatectomy, (To be published).

38. Marshall, M. Jr. and McNamara, T. M.: Fatal acute agranulocytosis following prolonged administration of small doses of sulfadiazine for urinary bacteriostasis, Calif. Med., 72:390-391, May 1950.

39. Narins, L.: The treatment of Bacillus coli and Bacillus proteus infections of the urinary tract with a new sulfonamide (NU-445), J. Urol., 59:92-95, Jan. 1948.

40. Nesbit, Reed M., and others: Clinical experience with Terramycin in treatment of refractory urinary tract infections: J. Urol., 65:336-342, Feb. 1951.

41. Pansy, F. E., and others: The relationship between aureomycin, chloramphenicol, and Terramycin, Soc. Exper. Biol. & Med., Proc., 75:618-620, Nov. 1950.

42. Peck, S. M. and Feldman, F. F.: Sensitivity reactions to aureomycin, J.A.M.A., 142:1137-1139, April 15, 1950.

43. Poth, E. J., and others: Neomycin: an adjunct in abdominal surgery, Southern M. J., 44:226-230, March 1951.

44. Pulaski, E. J. and Baker, H. J.: Combined therapy of infectious disease, Southern M. J., 42:765-769, Sept. 1949.

45. Pulaski, E. J. and Baker, H. J.: In vitro effects on gram-negative bacteria of streptomycin combined with penicillin and/or sulfadiazine, J. Lab. & Clin. Med., 34:186, Feb. 1949.

46. Pulaski, E. J. and Connell, J. F. Jr.: Procaine penicillin G for aqueous injection; a study of blood and urine levels, New England J. Med., 241:514-518, Oct. 6, 1949.

47. Pulaski, E. J. and Rosenberg, M. L.: Use of polymyxin in gram-negative urinary tract infections, J. Urol., 62:564-573, Oct. 1949.

48. Randall, R. V., and others: Intravenous administration of aureomycin including studies on the concentration in the serum, Proc. Staff Meet., Mayo Clin., 24:605-611, Dec. 7, 1949.

49. Rantz, L. A.: Infections of the urinary tract; Advances in Internal Medicine, 1:137, 1942.

50. Rubin, S. W. and Goldstein, A. E.: Aureomycin in urinary tract infections—preliminary clinical report, Ann. Int. Med., 32:661-672, April 1950.

51. Rutenburg, A. M. and Schweinburg, F. B.: Aureomycin in urinary infections due to gram-negative organisms, Proc. Soc. Exper. Biol. & Med., 70:464-467, March 1949.

52. Rutenburg, A. M. and Schweinburg, F. B.: Oral administration of aureomycin in the treatment of urinary infections, New England J. Med., 241:698-700, Nov. 3, 1949.

53. Sayer, R. J., Michel, J. C., Moll, F. C. and Kirby, W. M. M.: Terramycin: clinical, pharmacologic and bacteriologic studies, Am. J. Med. Sci., 221:256-263, March 1951.

54. Schoenbach, E. B.: The newer antibiotics: polymyxin, chloromycetin, and aureomycin, J. Mt. Sinai Hosp., 16:71-108, 1949.

55. Schweinburg, F. B. and Rutenburg, A. M.: NU-445 in the treatment of urinary infections due to gram-negative bacilli, Soc. Exper. Biol. & Med., Proc., 71:20-23, May 1949.

56. Scudi, J. V. and Duca, C. J.: Some antibacterial properties of mandelamine (methenamine mandelate), J. Urol., 61:459-467, Feb. 1949.

57. Seneca, H., Henderson, E. and Harvey, M.: Sulfadiazinc-sulfacetimide mixture in the treatment of urinary tract infections, J. Urol., 61:1105-1113, June 1949.

58. Stewart, B. L. and Lash, J. J.: The clinical use of NU-445 (Gantrisin) in the treatment of urinary tract infections; a report of 100 cases, J. Urol., 64:801-810, Dec. 1950.

59. Svec, F. A., and others: A new sulfonamide (Gantrisin); studies on solubility, absorption and excretion, Arch. Int. Med., 85:83-90, Jan. 1950.

60. Thompson, H. T.: A clinical evaluation of Gantrisin (NU-445), J. Urol., 62:892-899, Dec. 1949.

61. Umbreit, W. W.: A site of action of streptomycin, J. Biol. Chem., 177:703-714, Feb. 1949.

62. Vondra, N. and Solymár, J.: Improved methods in the treatment of coli and pyocyaneus infections with streptomycin, Acta Urologica, 2:167-170, 1948.

63. Voureka, A.: Bacterial variants in patients treated with chloramphenicol, Lancet, 1:27, Jan. 6, 1951.

64. Waisbren, B. A. and Spink, W. W.: A clinical appraisal of neomycin, Ann. Int. Med., 33:1099-1119, Nov. 1950.

65. Waksman, S. A., Frankel, J. and Graessle, O. E.: The in vivo action of neomycin, J. Bact., 58:229-237, Aug. 1949.

66. Waksman, S. A. and Lechevalier, H. A.: Neomycin, a new antibiotic active against streptomycin-resistant bacteria, including tuberculosis organisms, Science, 109:305-307, March 25, 1949.

67. Walley, J. F. L.: Severe reaction after penicillin, Brit. M. J., 1:150, Jan. 24, 1948.

68. Weir, A. B. Jr.: Clinical experience with sulfisoxazole (Gantrisin), Southern M. J., 43:868-871, Oct. 1950.

69. Wells, C. A. and Marcus, R.: Streptomycin in nontuberculous urinary infections, Brit. J. Urol., 21:68-77, March 1949.

70. Wilhelm, S. F., and others: Aerobacter aerogenes infection of the urinary tract; effective treatment with aureomycin, J.A.M.A., 141:837-839, Nov. 19, 1949.

The Medical Aspects of Civil Defense in California

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SUMMARY

Medical care for persons injured in atomic bomb attack or other far-reaching enemy action occupies an important place in civil defense plans that have been set up in California.

Preparations have been made on the basis of suppositions as to where attacks might occur and estimates of the number of casualties.

State and federal funds have been allocated for aid station equipment, antibiotics, plasma, blankets and litters.

In the table of organization, use of all physicians, nurses and hospitals in the state is contemplated. Communities at the center of attacks would borrow facilities and medical personnel from areas not directly affected.

County medical societies in California have appointed civil defense committees to work out local plans. Each physician has a part in these plans. If he does not know what his assignment is, he ought to get in touch with his county medical society headquarters immediately.

IT must be assumed that man is destined to live in a state of continued conflict. Therefore, plans and preparations must be made against wars which suddenly break upon us without warning or which follow a series of so-called "incidents."

We no longer live under such favorable conditions as existed in the past, namely, a vast ocean between us and our enemies and the fact that allies would combat the enemy while we were allowed to prepare for war.

In the future, because of the tremendous advances in aviation, submarines, guided missiles, and other weapons of destruction the civilians of this country may be the first targets and may even suffer greater casualties than our armed forces. In fact, it may even be safer to be a member of the armed forces than to live in a critical target area. The enemy will be able to bomb our cities just as we will be able to bomb his cities.

Civil defense plans and preparations are as important as are those of the armed forces. Each requires the other to survive and both are a direct responsibility of the Federal government. It has been said that the new Secretary of Defense, Robert A. Lovett, is of the opinion that civil defense is the fourth arm of the Defense Department and on a par with the Army, Navy, and Air Force. If such be the case, then civil defense will proceed more rapidly than it has in the past.

Civil defense is here to stay and must become a part of the daily life of every man, woman, and child in this country. It is disheartening to note that the public enthusiasm for civil defense increases and decreases with the headlines in the newspaper. This is understandable in a public which reads of waste of tremendous sums of our money overseas and of the apparent lack of interest in Congress in appropriating adequate money and encouraging civil defense. The public must demand of its congressional representatives that something be done about it if we are to survive as a free people. An enlightened and prepared America will effectively combat any war waged against her.

The appraisal of the over-all situation and of the need for urgency in civil defense preparations is a direct responsibility of the Federal government and we must depend upon the appraisal as given us. To date, considerable confusion exists, as is indicated in the wide divergence of opinions coming from key government officials regarding the urgency for civil defense. In the event of enemy action the problem of supplies, equipment, and materials beyond the first few hours must be a Federal responsibility. There must be a central purchasing authority and essential supplies must be stockpiled at once and distributed to the critical target areas. Only essential supplies should be stockpiled, for it is impossible to provide for every conceivable emergency. It would be easy to bankrupt us all if we attempted to cover everything. Loose thinking, such as the provision for elaborate bombproof shelters, must be eliminated. This would be a waste of critical materials and a tremendous loss of manpower hours.

No one can question the need for civil defense. We have only to study the great mistakes made by Germany and Japan in assuming that they would never be invaded from the air. They suffered tremendous and unnecessary casualties through lack of preparation and organization. Great Britain began civil defense training and organization in 1935 and would not have survived without it. The number of casualties at Hiroshima would have been greatly reduced if the city had been prepared.

DEVELOPMENT OF CIVIL DEFENSE IN CALIFORNIA

Some of the outstanding principles for good civil defense are as follows:

1. Effective, adequate legislation.
2. Self-help and mutual aid.

Read at the Medical Civil Defense Conference given by the American Medical Association, Chicago, Illinois; November 9, 1951.

The author is Chairman, Committee on Military Affairs and Civil Defense, California Medical Association; Chairman, Governor's Citizens Advisory Committee on Medical and Health Services (California).

3. Organization.

4. Education (enlightenment of the public and the medical profession).

5. Assignment of capable, interested persons to do the job.

California is fortunate in that excellent legislation has been provided for civil defense. In 1929, the California Legislature passed an act creating a State Emergency Council (Chap. 662, Statutes 1929) whose duty it was to prepare a general plan for the meeting of any great emergency occurring in the state, such as floods, fires, tornadoes, earthquakes, pestilence, et cetera. Some of the major cities took action to provide for disaster councils and to lay the groundwork for a disaster plan. Others soon followed this example.

In 1941 the Division of State and Local Cooperation of the National Defense Advisory Committee to the Council of National Defense requested the State to provide legislative authority for a Council of Defense; the Legislature on this recommendation created the California State Council of Defense Act (Chap. 561, Statutes of 1941).

The California Legislature passed the State War Powers Act (Chap. I, First Extraordinary Session, 1943) in January 1943. This statute, known as "The California War Powers Act," defined the duties and responsibilities of the state and its political subdivisions with respect to civil defense.

On June 25, 1945, the California Legislature filed with the Secretary of State the California Disaster Act (Chap. 1024, Statutes of 1945) which became effective September 15, 1945. This has proved to be a noteworthy action since it preserved the benefit of the experience gained and maintained a statewide organization to meet emergencies. The title and some of the principles of the 1941 act were changed, but the basic principle of the entire state functioning as a unit to protect lives and property was continued under the "California Disaster Act." The Governor and his staff were given the duties and powers of the California State War Council and of the State Council of Defense.

During the period from 1945 until the outbreak of hostilities in Korea on June 25, 1950, more than 200 cities and 45 counties adopted ordinances providing for "accredited disaster councils" as called for in the Act. Thus California was better prepared than most states to resume civil defense activities.

In January 1950 the aircraft observers system was instituted in California by the Federal Government. Twelve key centers were established in the state and about 600 posts were located. On July 7, 1950, only a few days after the Korea hostilities began, Governor Warren established the California State Civil Defense Planning Board, composed of the heads of all state departments and the chairmen of the advisory committees which had been in existence for a period of five years under the California Disaster Act. In September 1950 the Legislature passed the Civil Defense Act of 1950.

Governor Warren called a meeting of the governors of the three Pacific Coast states. With General A. C. Wedemeyer, who was commanding general of the Sixth Army, they met and discussed civil defense in California and the western states. General Wedemeyer agreed to send three competent training and planning officers to each state to assist in setting up the civil defense program. During September and part of October 1950, the three officers assigned to California assisted in the formulation of the civil defense plans and organization for the state. They were of great help.

In October 1950, Major General Walter M. Robertson, U. S. Army (retired), former deputy commander of the Sixth Army under General Wedemeyer, accepted appointment as the California State Director of Civil Defense. General Robertson has been very active in civil defense and has an organization of over 100 persons.

During the 1950 and 1951 sessions of the Legislature all laws with regard to civil defense recommended by Governor Warren were enacted, which brought the California statutes relative to civil defense into conformity with every recommendation of the Federal government. Master mutual aid agreements, model ordinance for city and county, shelter liability, rescue and first aid, workman's compensation benefits for volunteers, loyalty oath, et cetera, were covered in the statutes.

MEDICAL CIVIL DEFENSE FUNDS

A total of $12 million was appropriated by the 1951 session of the Legislature for the State Civil Defense Program and, in addition, $75 million was earmarked as available for emergency needs in the event of an atomic attack. Of the $12 million, the amount set aside for the purchase of medical and health supplies was $3,167,000, provided the Federal government would contribute $2 million for matching purposes. This would provide a total of $5,167,000.

To date these monies have been expended as indicated below:

Requisitions placed with the Federal Civil Defense Administration on FCDA forms Number 103, dated July 12, 1951:

Request No. 1, Aid Station Equipment	$ 333,135.00
Request No. 2, Antibiotics	82,000.00
Request No. 3, Plasma	1,003,756.00
Request No. 4, Blankets	250,000.00
Total	1,668,891.00
Transportation (5 per cent of above total)	83,444.55
	1,752,335.55
Litters to be manufactured by California correctional institutions at $14.25 each	356,250.00
Total all matched funds	$2,108,585.55

This would leave a balance of $3,056,414.45 for expenditure. This balance consists of $1,166,000 free monies since $1,000 of the free fund had been expended for the purchase of a single sample aid station to be used in studying unitizing procedures and packaging. Matching funds of this balance consist of $1,889,414.45, of which $1,044,000 has not been

previously encumbered. The balance of this money consists of surpluses from the original allocations resulting from the lower prices obtained by purchasing locally or changes in price quotations. In addition, it is proposed by the Division of Medical and Health Services to use approximately $30,000 for purchase of penicillin to supply aid stations. This money will come from the $1,166,000 balance of free funds.

The Medical and Health Services division will follow recommendations made by the Emergency Medical Advisory Committee and subcommittees to purchase plasma, antibiotics, morphine, additional aid station supplies, sanitation supplies and supplemental materials for aid stations, and to provide for unitizing and packaging costs, transportation, inspections, et cetera, within the state and for shipment by the Federal government. In addition, a one-week supply of facilities and equipment for the provision of whole blood will be purchased.

FEDERAL APPROPRIATIONS 1951

In 1951 approximately $75 million for civil defense was appropriated by Congress before it adjourned. This money will be allocated as follows: $11 million for operational expense, $56 million for medical and health services and engineering supplies, and about $7,500,000 for matching funds for communications, fire fighting equipment, etc. From the $56 million fund it is estimated that California will receive between $5 million and $6 million for medical purposes.

The formula which has been used within California for matching funds is as follows: If the Federal government provides 50 per cent, then state should provide 25 per cent and the local government 25 per cent.

WHAT ARE WE PLANNING AGAINST?

In California, plans are being made against eight atomic bomb strikes, two in the San Francisco area, two in the Los Angeles area, and one each in San Diego, Riverside, Fresno, and Sacramento.

The estimate of casualties (eight strikes) is as follows:

Total casualties	378,000
Total requiring hospitalization: 66⅔ per cent of 378,000	252,000
Maximum number in hospital at any one time: 75 per cent of 252,000	189,000

These strikes are considered as having occurred at noon on a weekday.

The number of first aid stations in the strike regions will be calculated on the basis of one station for each 600 casualties. Additional aid stations (up to 10 per cent more, the number depending upon the density of population) will be allotted to cover possible casualties in personnel and equipment incurred at the time of the explosion. At present, only five aid stations will be provided for in the non-strike areas. Each region should be told how many casualties it may expect and how many beds it should plan for.

The selection and size of improvised hospitals and the location and method of stockpiling first aid equipment are the responsibilities of the regional officials. In planning for estimated bed requirements, the state has referred to improvised hospitals in terms of 500 and 1,000 bed equivalents in order that planning for personnel and supplies will be uniform.

It has been recommended by the Medical Subcommittee of the Governor's Citizens Medical Advisory Committee that the minimum professional personnel for these hospitals would be 35 physicians for 500 patients (55 for 1,000), eight dentists for 500 beds, and 70 nurses for 500 beds.

The number of hospital beds and aid stations to be assigned is as given below:

*Region**	*Number of Hospital Beds To Be Provided by Each Region*	*Aid Stations*
1 (non-strike)	1,500	5
2 (non-strike)	1,500	5
3	70,500	255
4	11,000	39
5 (non-strike)	3,000	5
6	7,500	28
7 (non-strike)	4,500	5
8	5,000	18
9	81,500	276
10	13,500	47
10	199,500	683
Total beds (strike regions)		189,000
Total beds (non-strike regions)		10,500

THE CALIFORNIA MEDICAL ASSOCIATION IN CIVIL DEFENSE

The fundamental problem in civil defense is a quantitative one. Preparations must be made to mobilize and transport great numbers of medical and allied personnel and enormous quantities of medical supplies to any major disaster area, and to transport, hospitalize, and furnish prompt treatment to a tremendous number of casualties. Environmental sanitation must be maintained as well as the safety of the water, food, and milk supply. All this will have to be done under adverse conditions since there will be many professional casualties and much material damage. Also, plans must be made to deal with radiation injury and chemical and bacteriological warfare.

The proposed plan for the Medical and Health Services Division in the California Civil Defense Organization assumes that it is the division's task to provide for the augmentation of the services of the regularly constituted medical and health organiza-

* Region 1.—Del Norte, Humboldt, Lake and Mendocino Counties.

Region 2.—Butte, Glenn, Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama, and Trinity counties.

Region 3.—Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties.

Region 4.—Alpine, Amador, Calaveras, Colusa, Eldorado, Nevada, Placer, Sacramento, San Joaquin, Sierra, Stanislaus, Sutter, Tuolumne, Yolo, and Yuba counties.

Region 5.—Monterey, San Benito, and Santa Cruz counties.

Region 6.—Fresno, Kern, Kings, Madera, Mariposa, Merced, and Tulare counties.

Region 7.—San Luis Obispo, Santa Barbara, and Ventura counties.

Region 8.—Inyo, Mono, Riverside, and San Bernardino counties.

Region 9.—Los Angeles and Orange counties.

Region 10.—Imperial and San Diego counties.

tions in order to make available on short notice the expanded force of medical service and facilities that will be needed during the period of emergency. This plan outlines in detail the steps to be taken with regard to the emergency medical services, emergency public health services, and radiological safety services.

In June 1950, the National Security Resources Board recommended to state governors that they appoint their state health commissioners to be their state civil defense health service directors. It was further recommended that local health commissioners be placed in charge of local civil defense health services. Accordingly, Governor Warren appointed Dr. Wilton L. Halverson, the director of the California State Department of Health, as Director of the Medical and Health Services, and his agency was given responsibility for development of the medical and health plans of the State Civil Defense Program.

Shortly after the appointment of Dr. Halverson, the Governor appointed a Citizens Advisory Committee on Medical and Health Services to the State Disaster Council. The State Disaster Council is the policy-making board in civil defense for the State of California and the board to which the Governor looks for advice and recommendations.

The appointment of the Citizens Medical Advisory Committee greatly accelerated the civil defense program, and information of the over-all state medical picture and unification of plans and procedures was obtained in this way. This Medical Advisory Committee is composed of representatives of the California Medical Association, the osteopathic, dental, hospital, nursing, and veterinary associations, the drug trades, state and national public health services, American National Red Cross, funeral directors, water works, sewage disposal systems, the Sixth Army, Western Sea Frontier, Fourth Air Force, the universities, and others. This committee has subcommittees and also an executive committee to facilitate and coordinate its activities.

The state of California has been divided into ten regions for purposes of planning mutual aid. Six of these ten regions have been designated as target regions, and plans have been made accordingly. Under disaster conditions but with less than a state of extreme emergency the line of command and control extends from the Governor through the State Director of Civil Defense and stops at regional coordinators. The state civil defense organization will act to advise, to assist and to coordinate disaster activities only to the extent that lower political governments request such action. In a state of extreme emergency the line of command and over-all control extends to the directors of civil defense of cities and counties.

One of the main functions of the California Medical Association in civil defense is to correlate its activities with those of the state and federal governments and then to pass this information on to the local county medical societies.

In March of 1950 the Emergency Medical Service Committee of the California Medical Association was reactivated. The chairman of this committee attended the course on the medical aspects of atomic warfare and the medical conference on civil defense given by the American Medical Association. The day before the outbreak of hostilities in Korea, this committee adopted a planned course of action. On July 11, 1950, the chairman was appointed as chairman of the Citizens Advisory Committee on Medical and Health Services by the Governor. On March 31, 1951, the California Medical Association sponsored a refresher course for all county medical society civil defense committees. This meeting included representatives from the Federal government as well as key personnel from the state and local organizations. Additional refresher courses are planned.

In summary, it can be stated that the California Medical Association has:

1. Participated in atomic energy training courses regarding medical aspects of atomic warfare.

2. Kept abreast of civil defense activities in the state in meetings with the Citizens Medical Advisory Committee and with the California Disaster Council.

3. Sent representatives to medical civil defense conferences sponsored by the Council on National Emergency Medical Service of the American Medical Association.

4. Correlated its activities with those of dental, nursing, veterinarian, and other such organizations through membership in the Citizens Medical Advisory Committee.

5. Scheduled lectures on civil defense at medical meetings.

6. Planned civil defense exhibits (soon to be available) for use at civil defense meetings.

7. Helped in the planning and organization of a blood and blood derivatives program. (The California Medical Association has been very active in this phase of civil defense.)

8. Taken part in radiological safety advisory committee planning.

9. Arranged to conduct refresher courses for county medical civil defense committees.

10. Assisted in the preparation of the following manuals:

Manual for Emergency Field Treatment of Casualties. This manual outlines standardized treatment procedures for use in the field. It will be 4 x 6 inches in size and circulated to all interested groups.

Hospital Disaster Plan Guide for Existing Hospitals. Recommendations for the organization of hospital facilities and personnel are given in detail.

Plan for Operation of a First Aid Station.

Hospital Plan of Operation for Improvised Hospitals.

At no time has the California Medical Association received any Federal funds for civil defense activities nor is it planned to request any funds. Organized medicine will do its job as it has always done as a civic duty and as a representative of the free enterprise system.

In 1951 the House of Delegates of the California Medical Association abolished the Emergency Medical Service Committee and formed a new standing Committee on Military Affairs and Civil Defense.

INDIVIDUAL PHYSICIAN IN CIVIL DEFENSE

In California the county medical organizations have appointed civil defense committees. These local medical civil defense committees are working closely with civil defense authorities in their area and can expect help as needed from the California Medical Association.

It is the responsibility of every physician:

1. To be cognizant of the civil defense plan of his local community and of the exact part he is to play in it. He must find out at once where he is to be assigned if a disaster occurs during the day or night and how he will be notified. He should also be utilized according to his capability and his assignment station should be as close to his home or office as possible.

2. To assist actively and cooperate in the development and execution of the civil defense program. Many physicians seem unaware that there are local defense plans in which they have a vital place. A physician who has not been assigned a civil defense duty should immediately get in touch with his local medical society.

3. To keep abreast of current civil defense literature, particularly as it pertains to medicine. Physicians should study special simple treatment methods for burns, fractures, general first aid measures, problems of radiation injury, etc.

4. To attend special lectures on civil defense subjects and keep in close touch with his local medical civil defense committee.

5. To encourage his patients to take first aid courses. The minimum objective in California is for one member of each family to be trained in first aid.

A COUNTY MEDICAL CIVIL DEFENSE COMMITTEE

An excellent example of how medical civil defense planning has developed and is being carried out is the work of the Los Angeles County Medical Association Civil Defense Committee under the chairmanship of Dr. Frank Schade.

In 1947 a group of doctors who were members of the Medical-Dental-Nursing Veterans Association of Los Angeles formed a special committee to consider civil defense problems in the event of war. Members of the committee, who had seen havoc and destruction during the past war and were alarmed because nothing was being done in this country at the time, decided to meet once each month to discuss civil defense.

In July 1950, after the outbreak of hostilities in Korea, this committee was appointed as the civil defense committee for the Los Angeles County Medical Association. It began meeting for two hours three times a week to develop and coordinate civil defense activities in Los Angeles County. Special night meetings were also held. This committee was also officially recognized by the county health officer, the city health officer, and the county director of charities as an advisory and coordinating committee.

Los Angeles County has been divided into areas and an area medical director with two alternates has been assigned to each. First aid stations on the basis of one for each 5,000 population, and casualty collecting posts on the basis of one per 1,000 population have been set up. Approximately 400 first aid stations have been planned for.

Upon the recommendation of the Los Angeles County-Cities Civil Defense Regional Planning Board, a committee on public health and medical services was appointed. In addition to the Los Angeles County Medical Association there are representatives from the Los Angeles County Dental Association, Osteopathic Association, Nursing Association, Southern California Pharmaceutical Association, Veterinary Association, Hospital Association, Department of Charities, County Health Department and City Health Department. This committee meets twice each week at the headquarters of the Los Angeles County Medical Association. Transportation, sanitation, communications, improvising of hospitals, nursing problems, medical supplies, et cetera, are discussed in detail.

STATE DEPARTMENT OF PUBLIC HEALTH IN CIVIL DEFENSE

There has been splendid cooperation and good will between the California State Department of Public Health and the California Medical Association in civil defense.

Upon direction of Dr. Halverson, staff members of the State Department of Public Health were assigned on a full-time basis to develop medical and health planning for civil defense. In 1949 and 1950 the major work was done by Dr. Philip K. Condit assisted by Dr. James Ellis. Later Dr. Robert Dyar, Dr. Arthur W. Hollister, Jr., Dr. John Dement, Dr. Lester Breslow, Mr. Floyd Hartmen, Mr. Arve H. Dahl, and Mr. Frank V. Jones, Jr., Dr. James O. Culver, Mr. Bohn Lendemann and Miss Norma Whiteside were and have been very active in furthering civil defense plans.

At present, the staff of the Division of Medical and Health Services consists of Dr. Frank L. Cole, Brigadier General, M.C., U. S. Army (ret.) as chief; Dr. W. Dalton Davis, Rear Admiral, M.C., USN (ret.), assistant chief, Medical and Hospital Branch; Dr. Byron J. Peters, Colonel, M.C., U. S. Army (ret.), assistant to Dr. Davis; Jack Kirkpatrick, hospital consultant, assistant to Dr. Davis; Arve H. Dahl, chief of Sanitation Section and executive officer; Frank V. Jones, Jr., assistant chief of Medical and Hospital Supply Branch.

Both Major General Walter M. Robertson, U. S. Army (ret.), the Director of Civil Defense in California, and Mr. Burton Washburn, executive secretary of the California Disaster Council, have been most understanding and sympathetic to organized medicine and of its work in civil defense.

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Fractures About the Elbow in Children

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SUMMARY

The authors report clinical experiences in the treatment of 135 cases of fractures of the elbow region in children in which 60 cases have been followed to an end-result.

A detailed mode of treatment for supracondylar fractures, fractures of the medial epicondyle, and fractures of the lateral condyle and capitellum is discussed.

The pitfalls in treatment and causes of poor results are detailed.

FRACTURES of the elbow region in childhood are commonplace. Good results are not. Early recognition of trouble will reduce the number of poor late results.

During a recently ended five-year period, 135 cases of fracture of the elbow in children were observed on the Stanford orthopedic service of the San Francisco City and County Hospital. To date, 60 cases have been followed in the out-patient department to an end result. In all cases the injury was acute, and initial and subsequent treatment was carried out on the Stanford orthopedic service. The follow-up period has been up to four years. It is acknowledged that this is a relatively short follow-up period, but it is felt that it is sufficient to permit some conclusions with regard to complications.

This discussion will be limited to supracondylar fractures, fractures of the lateral condyle and capitellum, and fractures of the medial epicondyle.

Supracondylar Fractures. Brewster defined this fracture as any transverse fracture within an inch of the articular surface of the lower end of the humerus. This excludes the oblique fractures of the external condyle and capitellum and the epiphyseal separations of the medial epicondyle.

In the present series 32 cases were studied to an end result. The age of patients was from 3 to 10 years, the averaging age 6.1 years. The cases were equally divided as to the right and left arm, but no statistics are available as to major or minor arm ratio. There were 23 boys and nine girls in this group. In 28 cases the treatment was immediate closed reduction and immobilization in flexion. Traction suspension, after the manner of Dunlop, was used in three cases in which pronounced swelling of the soft tissues precluded the application of a cast with the elbow in a flexed position at the time of the initial treatment. When the swelling subsided, closed reduction and plaster immobilization were utilized in two of these three cases. All patients with fracture about the elbow are admitted to the hospital. They are observed closely until danger of ischemia is past. There were no complications due to ischemia. In two cases in this series, open reduction was necessary.

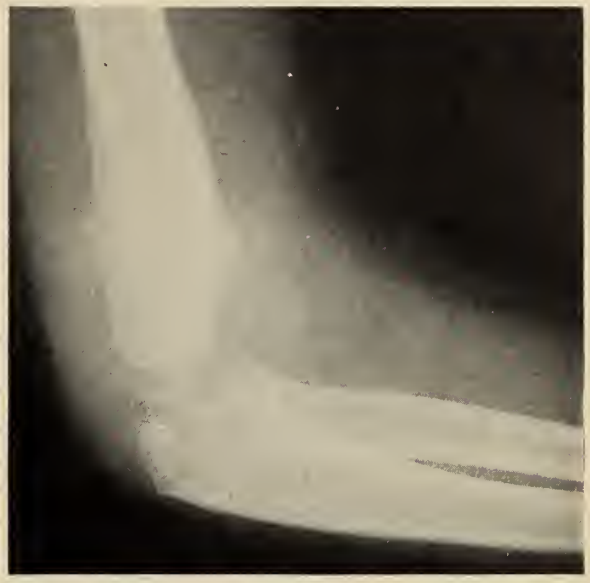

Figure 1.—Recurrence of posterior displacement of distal fragment due to inadequate immobilization. Loss of usual 20° anterior tilt has resulted.

To evaluate the end result, the following criteria were applied: If the fractured elbow was clinically or radiographically indistinguishable from the opposite uninjured elbow, the result was rated as excellent. This was the result in 25 cases in this group. A good result was one in which only a minimal amount of restriction of extension was present. There were six such cases. In none of them was there more than 15 degrees of restriction. A poor result was one in which by both clinical and radiographic means some anatomical disturbance was observed. In one case a cubitus varus deformity resulted from a growth disturbance of the medial condyle.

In treating a fracture of this type, certain normal anatomical relationships must be recognized and restored. The distal articular process of the humerus normally has an anterior tilt, which approximates 20 to 30 degrees. Unless this tilt is restored, function of the joint will be restricted (Figures 1 and 2). A persistent posterior displacement will result in loss of flexion, and anterior displacement in restriction of extension. Once the distal fragment has been restored, immobilization in flexion is necessary to maintain reduction. The amount of flexion that can

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be achieved at the initial treatment is determined by the extent of hemorrhage into the antecubital space. With the gradual decrease in swelling in the antecubital space, flexion of the elbow can be increased without impairing the radial pulse. The proper amount of flexion and position of immobilization is achieved when the thumb of the injured extremity can be placed comfortably against the neck on the uninjured side. This position must be attained within the first two weeks and maintained with a sling for a minimum of six weeks. In this classical Jones' position (Figure 3), the weight of the forearm cannot act as a lever to produce posterior displacement of the fragment. In one patient recurrence of posterior displacement of the distal fragment resulted from inadequate flexion and too short a plaster cast. Osteotomy, two years after initial reduction, was necessary for a final good result.

Figure 2.—Restoration by osteotomy of anterior 20° tilt of distal fragment.

Figure 3.—Illustrating proper amount of flexion to insure obtaining the classical Jones' position.

Rotation of the distal fragment in relation to the shaft of the humerus will result in an abnormal axis for motion unless realigned. Malalignment changes the carrying angle and results in permanent weakness in lifting power of the arm. In one case, open reduction had to be carried out to achieve proper coronal alignment. At operation, a sharp spicule of the distal fragment was observed to be imbedded in the tendinous expansion of the triceps, holding the lateral condylar portion posteriorly. Reduction was maintained by two-point fixation, using one chromic suture through periosteum and one Kirschner wire drilled obliquely across the fragment into the medial cortex of the shaft. Sixteen months after operation, loss of the terminal 10 degrees of extension was the sole remaining disability. This was considered a good end result.

Fractures of the Lateral Condyle and the Capitellum. Eleven patients with fractures of this kind were followed to end results. The average age of patients—eight boys and three girls—was 7.5 years. The right elbow was involved in five cases and the left in six. Seven were treated by closed means, and four by open reduction. In all cases in which treatment was by closed means, there was minimal or no observable displacement of the fragment, and results were excellent. Open reduction was carried out in four cases in which displacement of the fragment was observed (Figure 4). In three cases the result was excellent. In the other, 18 months after operation there was a 10-degree cubitus valgus deformity and a 5-degree restriction of extension. This was the sole poor result of the series. Although there was no evidence by x-ray of vascular impairment to the lateral condyle in this case, there was inequality of growth between the medial and lateral epiphyses.

It would seem from this series that when minimal displacement exists, good functional results can be obtained by closed means. It is necessary, however, to immobilize the arm securely to prevent displacement of the fragment by the pull of the extensor muscle group. In cases of displacement, open reduc-

Figure 4.—Showing rotational displacement of lateral condylar fragment which requires operation and internal fixation to restore alignment.

Figure 5.—Inequality of growth of medial condyle despite x-ray evidence of lack of vascular impairment, 10° cubitus varus is present.

Figure 6.—Delayed growth arrest of trochlea. Two years after fracture.

tion is indicated. In light of the fact that the lateral condyle in children is composed primarily of a large cartilaginous mass, the need for reduction under direct vision is evident. Frequently, it cannot be ascertained from x-ray films how much rotation of the fragment is present, as the only visible fragment is the circular ossification center. Open reduction must be carried out with a minimal disruption of the soft tissue attachments in order to preserve the blood supply to the detached fragment. Growth disturbances are inevitable if a fragment is avascular, despite anatomical reduction. The method of internal fixation is of no importance provided it is adequate and does not interfere with growth of the epiphysis.

Fractures of the Medial Epicondyle. Fractures, or epiphyseal separations, of the medial epicondyle are more common than fractures of the medial condyle. This is fortunate, for if fracture lines extend into the condylar area the prognosis is grave (Figure 5). In the present series, 17 cases of fracture of the medial epicondyle were observed. In five the medial condyle was involved. Fractures of this kind occurred in a slightly older age group; the average age of the patients was 11.7 years. This is understandable as the epiphysis in this region appears after the fifth year. There were nine boys and eight girls. Six patients had fracture of the right arm, and 11 of the left. In 13 cases displacement was minimal and treatment was by closed means. In four cases in which the fracture line extended into the condyle and displacement was present, primary open reduction and internal fixation were carried out. The only poor result was caused by failure to restore the displaced medial condyle to its anatomical position at the time of operation. In that case there was also lateral dislocation of the elbow joint with anterior displacement of the trochlear epiphysis which was treated by closed reduction. Good restoration of alignment with 2 mm. separation of the condylar fragment was observed in postreduction x-ray films. Two years later a well-established growth disturbance of the trochlea was noted (Figure 6). There was a cubitus varus deformity of ten degrees, with restricted motion. It is probable the injury could have been treated more effectively by open operation.

DISCUSSION

Any fracture about the elbow joint of a child is a serious problem. A real possibility of growth disturbance with resulting disability is always present. Every poor result in the series here reported was associated with some interference with growth. To avoid poor results, anatomical restoration of alignment and reapposition of fragments is imperative. Frequently, open reduction is necessary to achieve this goal in cases of condylar fractures with displacement. The reduction must be accomplished within the first two weeks. After this time union has progressed so far that alterations in position cannot be achieved without a major disruption of the healing process. The belief that an incomplete reduction will be corrected by the remodeling process of growing bone is not justified. The reduction must be maintained in the Jones' position for a minimum of six weeks. Careful supervision in the initial stages of treatment can avoid complications of ischemia. The earliest sign of trouble from ischemia is pain localized to the muscles of the forearm on extension of the fingers.

In the postimmobilization period, function can be restored best by active use. The authors believe there is no place for physiotherapy in the treatment of fractures about the elbow. Forceful manipulations of a stiffened joint or the carrying of heavy objects will tend only to increase deformities.

To detect the late arrest or disturbance of growth in the epiphysis of the trochlea or capitellum, all patients must be followed for three to five years. Such alterations in growth may occur despite the best of care.

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REFERENCE

1. Brewster, A. H., and Karp, M.: Fractures in the region of the elbow in children. An end result study, Surg., Gynec., & Obst., 71:643-649, Nov. 1940.

Needle Biopsy of the Liver

General Considerations

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SUMMARY

Needle biopsy of the liver provides concrete diagnostic information that cannot be as readily obtained in any other way. This report reviews 401 liver biopsies in 312 patients.

The major indications for use of this procedure are: To determine the cause of an obscure liver enlargement; to establish the cause of jaundice; to distinguish between malignant disease and cirrhosis of the liver; to determine when hepatitis has subsided; and to evaluate the results of treatment. At times, systemic disease that has not been recognized by other means may be diagnosed by this technique. There is risk in performing this test, and the 0.25 per cent mortality in this series compares favorably with that reported from other clinics. Where the diagnosis by biopsy could be compared with observations at operation or autopsy, the correct diagnosis was made by biopsy in 85 per cent of cases. Greater accuracy was obtained by two or more biopsic examinations in one case than by single biopsy.

In several cases in which surgical operation was considered, biopsic information made it unnecessary, and vice versa.

In the four years prior to February 1950, needle biopsy of the liver was carried out 401 times in 312 patients. The present report is based upon a continuation of studies begun elsewhere by Molle.[7]

The development of needle biopsy of the liver and the various techniques employed have been adequately discussed, and the increasing number of papers[1-10] dealing with this subject testify to the interest in this method. Accurate pathologic information, readily obtainable with minimal risk to the patient, is possible by means of this technique. Moreover, serial studies to follow the progress of an illness or the results of therapy may be accomplished. Since only a small portion of tissue is removed, focal processes may be missed. Reliable information may be expected most often in diffuse disease of the liver. As the method is not without danger, it should be used only by those who have been thoroughly trained. For the best results, a pathologist who is interested in and familiar with examination of material of this type should be available.

METHOD

The technique previously described[2, 7] was used in all cases in this series. Many of the biopsies were done by residents, but all were done by or under the direction of one of the authors (W.E.M.). Approximately one-third of the 401 biopsies were done through an anterior approach (when the liver was down 5 cm. or more below the right costal margin). In the remainder a transpleural approach was used. Of the total number, 57 (22 per cent) were serial biopsies (Table 1). The incidence of complications was no greater in connection with multiple than with single biopsy.

INDICATIONS FOR BIOPSY

Of course, the prime indication (Table 2) for liver biopsy is suspicion of liver disease with the diagnosis inadequately clarified by other means. The method is of value in the differential diagnosis of jaundice, in

Table 1.—*Needle Biopsy of the Liver*

DURATION OF STUDY—Jan. 1947 to Feb. 1950	
No. of patients studied	312
No. of biopsies studied	401
With one biopsy	255
With two biopsies	37
With three biopsies	15
With four biopsies	2
With five biopsies	2
With nine biopsies	1

Multiple biopsies were done in 22 per cent of the cases.

Table 2.—*Indications for Biopsy*

Undiagnosed Hepatomegaly
Type of Jaundice
Neoplasm, metastatic or primary Cirrhosis, type
Progression of Hepatitis
Evaluation of Therapy
Unrecognized Systemic Disease
(Leukemia, Hodgkin's disease, brucellosis, sarcoidosis, miliary tuberculosis, infectious mononucleosis, schistosomiasis, hemochromatosis, amyloid disease, etc.)

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TABLE 3.—*Clinical Diagnosis and Changes Made on Basis of Biopsy*

Clinical Diagnosis	Biopsy: Diagnosis	Biopsy: No. of cases
Portal Cirrhosis (22 cases)	NDAR*	14
	Metastatic carcinoma	4
	Amyloidosis	2
	Hepatoma	1
	Hepatitis	1
Metastatic Carcinoma (9 cases)	Chronic cholangitis	3
	Normal	2
	Portal cirrhosis	2
	Hepatitis	1
	Subdiaphragmatic abscess	1
Hepatitis (36 cases)	Portal cirrhosis	19
	NDAR*	14
	Obstructive jaundice	3
Obstructive Jaundice (9 cases)	Portal cirrhosis	5
	Hepatitis	4
Hepatomegaly (16 cases)	Portal cirrhosis	7
	NDAR*	6
	Leukemia	2
	Hepatitis	1

* No diagnostic abnormality recognized.

detection of neoplasm, in determining the progress of hepatitis, in evaluating therapy, and in recognizing a number of systemic diseases, which may not, at times, be apparent otherwise (see Table 3).

CASE REPORTS ILLUSTRATING INDICATIONS FOR BIOPSY

CASE 1. The patient was a 48-year-old white male with syphilitic heart disease, aortic insufficiency, history of prolonged alcoholism, and hepatomegaly. Biopsy of the liver was done because of the possibility of portal cirrhosis or syphilitic hepar lobatum. No abnormality was noted in the specimen. At autopsy several months later the liver was observed to be normal.

CASE 2. A 50-year-old white male had progressive painless profound jaundice of several weeks' duration, anorexia, loss of weight, and pruritus. There was a history of penicillin injections three months before admittance to hospital. Results of liver function tests were consistent with both obstructive jaundice and parenchymal involvement of the liver. In biopsy the changes of infectious hepatitis were noted, and the clinical course was consistent with this diagnosis.

CASE 3. A 49-year-old white male was admitted with a history of anorexia followed by jaundice of several days' duration prior to admittance. There was a history of testosterone injections and methyltestosterone linguet administration for several months before onset of icterus. Results of flocculation tests were positive, the icteric index was 110, and the alkaline phosphatase content of the blood was not elevated. In biopsy, changes characteristic of obstructive jaundice were noted but as the attending physicians still felt strongly that the patient had infectious hepatitis, biopsy was carried out again six weeks later, and the original observation was confirmed. At this time the icteric index was 26, but the alkaline phosphatase had risen to 18 units (Bodansky). In exploration, chronic cholecystitis, cholelithiasis, and a calculus in the common duct were observed.

CASE 4. A 44-year-old white male with history of sudden onset of jaundice shortly before admittance, associated with anorexia and malaise, was thought definitely to have infectious hepatitis. Because the liver was larger than usual, biopsy was done. Portal cirrhosis with marked fatty infiltration was noted. Requestioned, the patient readily admitted to heavy consumption of alcohol and an inadequate diet for a period of many months.

CASE 5. The patient was a 54-year-old white male with bronchogenic carcinoma. Because of moderate hepatomegaly, biopsy of the liver was done and metastatic carcinoma was observed in the specimen.

CASE 6. A 52-year-old white male complained of epigastric pain radiating to the back. No abnormality was noted in roentgen studies of the spine and gastrointestinal tract, and carcinoma of the body and tail of the pancreas was suspected. Although there was no hepatomegaly, biopsy was done as a forerunner of surgical exploration. Metastatic carcinoma, of a structure suggesting the primary source was the pancreas, was noted.

CASE 7. A 35-year-old white male chronic alcoholic was admitted many times with evidence of hepatic disease. Liver biopsy was done nine times in the course of repeated admittance to hospital for the same condition. It was noted that repeatedly the fat cleared from this liver and the liver parenchyma was restored to normal. This occurred as quickly and as completely with the patient on a ward diet as it did when a high protein, high caloric diet and large amounts of lipotropic substances were given.

CONTRAINDICATIONS

There are several contraindications to needle biopsy of the liver.

1. *Uncooperative patient.* The patient must be able and willing to follow directions. If the patient is uncooperative, stuporous, or comatose, biopsy should not be done.

2. *Impairment of the blood clotting mechanism.* This is a major hazard, since fatal bleeding may follow the procedure. Bleeding time, clotting time and prothrombin time studies should be carried out before biopsy. After biopsy, the patient should be carefully observed for any evidence of hemorrhage. Serious bleeding usually occurs within eight hours and is manifested by the usual signs of acute loss of blood. Although these precautions were taken, the one patient in this series who died as a result of biopsy died of hemorrhage. The patient had aleukemic myeloid leukemia with hepatic infiltration. Prothrombin, bleeding, and clotting times, determined before biopsy, were normal. An hour and a half after biopsy, shock developed. Had there not been a delay in starting blood transfusions, the patient might have lived.

3. *Recent infection in the region of the biopsy.* This is considered a contraindication because of the likelihood of spreading the infection. However, in one case the nature and site of an infectious process were diagnosed by biopsy that was done for another reason. The patient had had gastric resection seven months before for carcinoma. Biopsy was done because metastatic liver neoplasm was suspected. When the specimen was examined, a subdiaphragmatic abscess was diagnosed. Later it was incised and drained. The infection did not spread. (This case is being reported elsewhere in detail.)

4. *Ascites should be removed prior to biopsy.* When the ascitic fluid is removed, the size of the liver is readily determined. Also, the liver becomes less mobile, and biopsy less hazardous.

5. *Abdominal distention.* This condition increases the possibility that a hollow viscus will be punctured. If distention is pronounced, biopsy should not be done.

6. *Chronic passive congestion of the liver.* The danger of post-biopsy hemorrhage is greater in this situation. However, in one case in which the patient was later found to have chronic constrictive pericarditis, biopsy was done without complication. Other observers have reported similar experiences.[2]

7. *A small liver.* The possibility of needling an extrahepatic organ is greater if the liver is very small. For this reason, if there is no hepatic dullness perceptible by percussion during expiration, and the liver is not palpable, biopsy should not be done. A small liver plus ascites may make biopsy of the liver impossible by the technique used in this series.

8. *Complete obstructive jaundice.* In this situation, bile is present under increased pressure in dilated bile ducts. The danger that leakage of bile will cause bile peritonitis is great. This occurred in one case in this series. (It is discussed later in this presentation.) Fortunately, this reaction occurs infrequently. Where the information is required, the risk may be worth taking, as Hoffbauer[5] has recently stated. This hazard does not exist where there is incomplete obstruction of the common bile duct.

REACTIONS TO LIVER BIOPSY

In the great majority of instances, liver biopsy causes little significant discomfort. Pain with radiation to the right shoulder was noted in 25 per cent of the cases in the present series, epigastric discomfort in 30 per cent, and pneumothorax in 2 per cent. The only major untoward reactions in the present series were fatal hemorhage (one case) and bile peritonitis (one case). Other reactions and complications which might be expected — apprehension, friction rub, pleural hemorrhage, perforation of hollow viscus, perforation of gallbladder, atelectasis, and reaction to local anesthesia—did not occur in this series.* The case in which fatal hemorrhage occurred was discussed previously. In addition, bile peritonitis developed after biopsy in a patient with carcinoma of the head of the pancreas. The site of bile leakage was not observed when the operation was carried out. Although the patient recovered from the peritonitis, he died subsequently from the primary disease. Later, biopsy was done, without complication, in seven additional cases in which obstructive jaundice was present.

DISEASES OF THE LIVER DIAGNOSED BY BIOPSY

A summary of the pathologic diagnoses made by one of the authors (L.K.) follows:

Cirrhosis, 176 cases (51 per cent); hepatitis, 44 cases (13 per cent); metastatic neoplasm, 15 cases (4.4 per cent); obstructive jaundice, nine cases (2.7 per cent); miscellaneous conditions, 47 cases (14.8 per cent). In 47 instances no diagnostic abnormality was recognized. The miscellaneous conditions and the number of instances of diagnosis were: chronic cholangitis, 12; granulomatous hepatitis, 4; leukemia, 3; in two cases each, hemochromatosis, malarial pigment, hemosiderosis, portal lipogranulomata, toxic hepatitis (carbon tetrachloride), and amyloidosis; and in one case each, malignant lymphoma, primary hepatoma, reticulum cell sarcoma, septic hepatitis (focal), agnogenic myeloid metaplasia, and subdiaphragmatic abscess. In five instances the specimens obtained were inadequate.

The clinical diagnosis was sustained by biopsy in 220 cases (70.6 per cent), whereas a change in diagnosis was made in 92 cases (29.4 per cent). In Table 3 are listed some of the changes from the clinical diagnosis that were made as a result of the biopsy. To simplify tabulation, cases in which varying degrees of fatty infiltration were noted in biopsy are listed under the diagnosis of portal cirrhosis. As may be noted in Table 3, three patients who on the basis of clinical examination were thought to have infectious hepatitis, had obstructive jaundice necessitating surgical intervention. The biopsy diagnosis was verified at operation in all three instances. On the other hand, four patients thought to have obstructive jaundice had infectious hepatitis, as was diagnosed by biopsy. These patients were spared surgical intervention, and the biopsy diagnosis was supported by the clinical course of the patients. In two cases leukemia was diagnosed by examination of a specimen of the liver after all other diagnostic methods had failed to establish the diagnosis.

In only 3 per cent of the cases in the present series was there failure to obtain an adequate specimen. This is related to the experience of the person performing the biopsy, and the fact that multiple punctures were done if necessary to obtain an adequate specimen.

ACCURACY OF BIOPSY DIAGNOSIS

In an attempt to determine the accuracy of diagnosis by biopsy in this series, the results obtained by single and serial needle biopsy were compared with observations at surgical exploration and at autopsy in cases in which such data were available.

In the group of cases in which diagnosis was confirmed either by autopsy or at time of operation were 45 in which single biopsy and eight in which multiple biopsy had been done. In seven (16 per cent) of the cases in which single biopsy was done, the biopsy diagnosis was incorrect. All of the diagnoses made on the basis of two or more biopsies agreed with the observations at operation or autopsy. In one case in this group the diagnosis made upon examination of the first specimen was incorrect; a second was examined and the right diagnosis was made. In the group in which diagnosis was determined by multiple biopsies, the diagnosis made on the basis of examination of the first specimen was incorrect in 6 per cent of the cases. It is impossible to say how many of these diagnoses will be altered by future surgical exploration or observation at autopsy. It may be concluded, however, that pathologic diagnostic accuracy is best served by multiple

* Since the above figures were compiled, 154 additional liver biopsies have been done without untoward event.

biopsy. A second biopsy is most clearly indicated when the first is not conclusive.

Autopsy was done in 39 cases and surgical exploration in 14 after varying periods from the time of liver biopsy. Thus surgical or autopsy observation was carried out in 53 cases—17 per cent of the series. Fifty-six pathologic diagnoses were made on the basis of liver biopsies in the 53 cases. Correct diagnosis was made in 86 per cent of those cases. The incorrect diagnoses deserve some clarification. In two of seven cases in which cholangitis was diagnosed by liver biopsy, concurrent disease which was present was not diagnosed. In one instance, a single peripheral metastatic lesion from a primary rectal adenocarcinoma, and, in the other, a deep-seated bile duct carcinoma, were observed at autopsy. Two of 13 instances of metastatic neoplastic growth in the liver were not diagnosed by liver biopsy. One case was previously mentioned, and in the other there were widely scattered metastases to the liver from a primary carcinoma of the pancreas. In one of two instances of primary carcinoma of the liver with simultaneous generalized liver cirrhosis, the cirrhosis was diagnosed by liver biopsy but the carcinoma was not. Cirrhosis was missed in four cases; only periportal fibrosis was noted in examination of each of these specimens. However, in these cases liver biopsy was carried out one, two, three, and 16 months, respectively, before surgical or autopsy examination. This time factor may account in part for the failure to evaluate the biopsy specimens properly, although it is well known that variation in the degree of alteration of the liver parenchyma from place to place does occur in this disease. In one instance of gummatous syphilitic hepatitis, the diagnosis made on the basis of liver biopsy was portal fibrosis with hepatocellular degeneration.

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REFERENCES

1. Baron, E.: Aspiration for removal of biopsy material from liver: report of 35 cases, Arch. Int. Med., 63:276-289, 1939.

2. Cogswell, R. C., Schiff, L., Safdi, S. A., Richfield, D. F., Kumpe, C. W., and Gall, E. A.: Needle biopsy of the liver, J. Amer. Med. Assoc., 140:385-390, May 28, 1949.

3. Gillman, T., and Gillman, J.: Modified liver biopsy apparatus and technique, S. Afr. J. Med. Sci., 10:53-66, June 1945.

4. Hoffbauer, F. W., Evans, G. T., and Watson, C. J.: Cirrhosis of the liver; with particular reference to correlation of composite liver function studies with liver biopsy, Medical Clinics of North America, 29:363-388, March 1945.

5. Hoffbauer, F. W.: Needle biopsy of the liver, S. G. & O., 92:113-115, Jan. 1951.

6. Iversen, P., and Roholm, K.: On aspiration biopsy of the liver, with remarks on its diagnostic significance, Acta. Med. Scandinav., 102:1-16, 1939.

7. Kumpe, C. W., Gall, E. A., Schiff, L., Molle, W. E., Safdi, S. A., and Steinberg, H. H.: Needle biopsy of the liver, Gastroenterology, 9:672-681, Dec. 1947.

8. Sherlock, S.: Aspiration liver biopsy, Lancet, 2:397-401, Sept. 29, 1945.

9. Tripoli, C. J., and Fader, D. E.: Differential diagnosis of certain diseases of the liver by means of punch biopsy, Am. J. Clin. Path., 11:516-527, June 1941.

10. Volwiler, W. and Jones, C. M.: The diagnostic and therapeutic value of liver biopsies, New Eng. J. Med., 237: 651-656, Oct. 30, 1947.

Prolonged Labor

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SUMMARY

Dystocia is usually the result of inadequate uterine contraction or slow cervical dilation or both.

Some conditions causing these deficiencies are large size of the infant, multiple pregnancy, hydramnios, faulty presentation (particularly the occiput-posterior), occluding tumors, fullness of the bladder, umbilical cord impediment, concealed uterine hemorrhage, clamping of a thick anterior cervical lip by the infant's head, adhesion of the membranes to the cervix, or delay in rupture of the membranes. Dystocia is often observed in patients with hypopituitarism. A nervous, worrying temperament may seriously affect the progress of labor.

Maneuvers that are helpful in many of these difficulties are described and the indications and dosages for Pitocin® are presented.

DYSTOCIA, one of the greatest obstetrical problems, is quite common. It occurs for the most part in primiparous women. In the author's experience most women who have prolonged labor at the birth of a first child have a much shorter period of labor at subsequent deliveries.

Usually dystocia results either because contractions are short and weak, with long intervals, or because the cervix, whether firm and rigid or soft and apparently normal, dilates slowly. In some cases both sets of circumstances are present. Some fundamental facts must be remembered for the understanding of these difficulties:

1. Delivery of an infant includes three stages—descent, dilation, and expulsion—any one or all of which may be prolonged or slow. Ordinarily the head is engaged from two to four weeks before term and descent is thus begun. As the cervix gradually dilates, the head usually continues to descend; after full dilation of the cervix and rupture of the membranes expulsion occurs. In some cases, however, the head is engaged only lightly, or not at all, until full dilation is accomplished or until the membranes have been ruptured.

2. The cervix cannot dilate until it has something coming down into it, over which it can retract and thus help stimulate uterine contractions.

3. If the uterine musculature is overly stretched, it cannot contract as frequently, as long and as forcibly as it could otherwise.

In light of these factors, it is well to consider certain conditions which prevent or retard the descent of the head and may lead to inadequate contraction. (The special problem of contracture of the pelvis will not be discussed in this presentation.)

A large baby may distend the uterus so that contractions are weak and infrequent and the descent and expulsion of the head are slow. Multiple pregnancy and acute hydramnios may have a similar effect.

Faulty presentations, such as face, brow, transverse, occiput-posterior and breech, frequently result in long, difficult labor. Of these, occiput-posterior presentation is the most common and will be discussed in detail later.

Tumors such as fibroids, ovarian and parovarian cysts, and also the other cornu of a bicornuate uterus, may so completely block the pelvis that cesarean section is necessary. A tumor is sometimes not discovered until late in labor.

A full bladder in the mother may interfere with descent of the baby's head. The author has observed several cases in which the head, after it was well into the pelvis, gradually was pulled so far back out of the pelvis by increasing distention of the bladder that it hardly could be felt upon rectal examination. Hence the bladder of a patient in labor must be kept empty, with the aid of a catheter if necessary.

A short umbilical cord or one that is around the neck may tend to hold back the head in the second stage and prevent its expulsion. It is therefore important to listen to the fetal heart after every second or third contraction in the second stage in cases in which the head is slow to advance; and the physician must be prepared to carry out forceps delivery if there is evidence of fetal distress.

Hemorrhage into the uterine wall, as in abruptio placentae with concealed hemorrhage, may also affect the efficiency of the contractions.

DEALING WITH NERVOUS PATIENTS

Women of certain types frequently do not have good contractions. Short, fat women with hypopituitarism are likely to have difficulty, as are nervous, temperamental, worrying women.

A patient of the latter type may be so tense and nervous that the cervix is apparently spastic and remains contracted because of this nervous control. Often when such a patient is given sedation to relax nervous tension the cervix will dilate rather rapidly. Some patients may repeatedly demand medication to relieve pains before labor is really well begun; but early medication usually prolongs labor. These women can be helped most by psychosomatic treat-

ment. If they can be talked to and encouraged to stand the pains until the cervix is dilated about three centimeters, medication then can be given without unduly slowing labor.

The use of Pitocin® may be advisable to stimulate labor in patients with weak, infrequent pains. This aspect will be discussed later.

In so-called cervical dystocia, labor is prolonged by slow cervical dilation. If the cervix is long and narrow, as it is in many cases of premature labor, it may take hours to efface and dilate. The physician can usually do nothing in such cases but wait.

Often a thick anterior cervical lip, which gets stuck between the symphysis and the head, holds back the head and becomes more edematous as labor goes on. If this occurs with the head or the breech high in the pelvis, if the baby seems unusually large and if the edema increases while the cervical dilation does not progress, disproportion should be suspected and cesarean section carried out. The thick anterior lip is observed usually in multiparas and usually when the cervix is dilated to six or eight centimeters. If the head is deep in the pelvis, the physician can easily push this cervical lip up over the head during a uterine contraction, keeping the palm upward and pressing firmly against the cervical lip with the index and third fingers while the other hand is pressed down on the fundus in order to keep the head deep in the pelvis. This maneuver can often be completed during one contraction but the pressure may have to be repeated during seven or eight contractions.

ADHERENT MEMBRANES PREVENTING DILATION

Another situation less frequently encountered is that in which the cervix effaces but does not dilate to more than one-half to two centimeters. It may be so thin that it is not palpable on rectal examination. The patient is usually in good labor, yet the cervix remains the same despite good contractions. In these circumstances vaginal examination should be done; it will probably be found that the membranes adhere so closely to the cervix as to prevent dilation. If the finger is passed around the cervix, separating it from the membranes, the cervix then may immediately dilate up to four to seven centimeters and labor proceed normally. It is usually best to rupture the membranes at the same time. In one case the author had to stretch the cervix with a Mayo clamp in order to make an opening large enough for insertion of the finger; when the membranes were separated from the cervix it readily dilated to four centimeters and labor proceeded quite rapidly.

If the membranes do not rupture normally they may prevent the head from descending through the cervix. This occurs usually in a multipara or with occiput-posterior presentation. The cervix may remain for several hours dilated to six or seven centimeters; the head is usually in mid-pelvis, the contractions are inadequate, and on rectal examination the cervix feels soft and seems to stretch very easily. Rupture of the membranes usually causes the head to descend immediately to the perineum and through the cervix. If the contractions do not improve immediately, Pitocin may be needed.

Similar treatment may be necessary in cases in which dilation is so slow that after 24 to 36 hours it has progressed to only three to eight centimeters. Often when the patient has been so long in labor the contractions are weak and only five or six minutes apart. If the baby is not too large, if the head or breech is deep in the pelvis, and if the dilation is at least five centimeters, it is fairly certain that the patient will deliver vaginally. The membranes should be ruptured and Pitocin administered intranasally in four to eight doses of 0.5 cc. once every half-hour. Usually good contractions will begin, the cervix will dilate and delivery will follow, with or without the aid of forceps. Very rarely it may be necessary to dilatate the cervix with every contraction, taking one or two hours before dilatation is complete. If the patient is very tired, nervous and tense, one of the barbiturates or a stronger drug like Pantopon® or Demerol® may be used to relax her and give her a little rest, after which the cervix often will dilate fairly rapidly.

The procedure described for pushing a thick anterior lip over the baby's head may also be applied to speed slow labor, with forceps used if necessary to complete the delivery. The procedure may be used also to speed delivery in such emergencies as hemorrhage, convulsions, and fetal distress.

If the presenting part (head or breech) remains high and especially if the baby seems large, cesarean section is probably advisable, especially if there is no sign of progress after the membranes have been ruptured or Pitocin has been administered.

The previously discussed features of weak, infrequent contractions and incomplete dilation are often associated with occiput-posterior presentation. Usually if the cervix is slipped over the head with the fingers the head descends immediately to the perineum, rotating at the same time to an anterior position. If it does not rotate properly, however, it may be rotated in the following manner, which is applicable whenever the head is in posterior position:

With the right occiput posterior, stand on the patient's right side and insert the index finger of the right hand into the vagina to identify the posterior fontanelle. Press on the small ridge formed by the left parietal bone overriding the occipital (the lambdoid suture), forcing the head upward, anteriorly and to the right. At the same time press down on the fundus with the left hand to keep the head deep in the pelvis. The head can often be turned in one or two contractions but 15 or 20 may be required if the head is large or tight in the vagina. No attempt should be made to turn the head until it is well below the spines.

Pitocin should preferably be administered intranasally at first in all cases. If there is no effect, it may then be given intramuscularly. The usual intranasal dose is 0.5 cc. every half hour for not

more than eight doses. Sometimes normal contractions will follow even the first dose, although in other cases two or three series of eight doses, separated by six- to eight-hour intervals, may be necessary. Some patients may need an occasional dose to keep labor going well. If the cervix is fully dilated and there is no response to intranasal dosage, one minim of Pitocin may be given intramuscularly, every 15 minutes if necessary. The dose may be increased to two, three or even four minims every 15 minutes. Seldom are more than three or four intramuscular doses required.

Estrogenic injections are given in many cases, in two or three doses of 20,000 to 40,000 units each during the course of long labor. The estrogens are believed to be helpful in stimulating contractions of the uterine musculature.

The cervix is often lacerated on one or both sides during such procedures as dilatation or pushing the cervix over the baby's head. Indeed, it is often lacerated after normal labor in which it has not been touched. Despite the statements in textbooks, the lacerations almost never bleed; the author has observed only two instances in which suturing was necessary because of bleeding. The cervix should always be inspected after delivery, whether labor was prolonged or normal, and even lacerations no deeper than one-half centimeter should be sutured. The cervix can be easily exposed by the use of anterior and posterior vaginal retractors. The anterior cervical lip is then grasped with a sponge stick at the 12 o'clock position. With this as an anchor, the cervix can be exposed serially by alternately grasping and releasing with two other sponge sticks around the entire circumference. Any laceration can be easily sutured by grasping the cervical lip at each side of the laceration with a sponge stick and starting a continuous suture high up at the apex of the tear.

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Psychosomatic Problems in Urology

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SUMMARY

The intimate relationship between the urinary and genital systems permits stimuli in one system to influence the other. At least 15 per cent of women with symptoms of cystitis have no organic basis for their complaints. In psychiatric studies it has been noted that sexual conflict is the primary etiological factor in these patients. In some cases, continuance of the disorder leads to irreversible organic change. Urinary symptoms such as frequency, urgency, burning or retention are most common in women and become an automatic response to anxiety-provoking or sexual stimuli.

In men, functional urinary symptoms are relatively infrequent. Often they indicate problems of genital dysfunction. Complaints of impotence, penile pain, testicular pain, or non-specific urethritis stem back to difficulties in their sexual lives. Many of the patients have symptoms of a generalized anxiety tension state due to sexual problems.

A purely organic consideration of genitourinary disorders will lead to erroneous conclusions and unsatisfactory therapeutic results. The psychosomatic approach—that is, considering both physical and psychological aspects—will explain many hitherto difficult cases.

In recent years extensive studies have been made of the effects of emotional tension upon the skin, cardiovascular, respiratory and gastrointestinal systems, and the psychosomatic manifestations of disease of these systems and of other organs are now commonly recognized and treated from the psychiatric standpoint.[8] Emotional tension acting through the autonomic nervous system can affect the functioning of most organs. It is well known that many persons under acute emotional stress, such as that caused by taking examinations, may have urgency and frequency of urination, or even, on occasion, retention of urine. A tense person, chronically anxious, may respond to continuous strain by frequent urination, which may become a habit.

In view of this general knowledge, it is surprising how little can be found in the urologic and psychiatric literature on the interrelationship of the emotions and the urogenital system.[2, 3, 4, 6, 7] Observation of patients over the past eight years has convinced the authors that in cases in which urologic symptoms respond poorly to therapy for organic disease, there is associated emotional tension. If in careful examination organic disease is not found to be present, the psychological background of the patient should be explored. Consistently in such cases it has been noted that the patient has extreme reactivity to the stresses of everyday living. In none of the cases observed by the authors in which this situation existed did the patient have a satisfactory sexual life. Invariably, some emotional disturbance or frustration immediately preceded the onset of symptoms and each exacerbation occurred in similar circumstances.

While urination is a physiological process by which vesical tension is relieved, it also serves as a means of expressing certain psychological tensions and attitudes. The intimate histological and embryological connection between the urinary and genital systems permits physiological and psychological stimuli in one system to flow over and find discharge in the other. In the child, urination gives a feeling of pride and of physical satisfaction. Under certain stresses, an adult may revert to this action as a source of physical pleasure. In particular, some persons substitute urinary symptoms for sexual satisfaction when the latter is unobtainable. Some women retain urine for long periods because they experience a pleasurable sensation on voiding. When sexual arousal first appears in a child or adolescent, the unfamiliar feelings of tumescence and pelvic fullness are interpreted as stimuli from the bladder with a feeling of the need to urinate. Many adults have found that partial distention of the bladder enhances their erotic pleasure in sexual relations. Some persons, particularly women, owing to various conditioning experiences, have no direct sexual pleasure; in them it is displaced entirely to the urinary system. Almost all patients with urinary frequency and urgency for which no physical cause can be found are women, and almost all are sexually repressed or even frigid, their symptoms originating in situations of sexual frustration or temptation.

"CYSTITIS" IN WOMEN

"Cystitis" is a common disease in women. Among the symptoms are urgency, frequency, nocturia, and burning on urination. Of paramount importance in differential diagnosis is proper examination of the urine obtained by catheter. Absence of pus cells or bacteria in the urinary sediment indicates that vesical irritability may be due to nervousness. One-fourth of women with symptoms of cystitis have no urinary infection, and obviously chemotherapy will not re-

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lieve them. But about two-fifths of the patients of that order do have chronic urethritis which responds to vaginal stilbestrol suppositories. In the remaining three-fifths the symptoms of cystitis are psychogenic. In cystoscopic examination of patients in the latter group, increased redness of the trigone and urethra usually is noted, leading to a diagnosis of organic "trigonitis" and "urethritis." Occasionally hypertrophy of the detrusor muscle, secondary to sphincter spasm, is noted. Empirical treatment of these "inflammations" as organic disease consists of urethral dilatations, vesical irrigations and instillations of various antiseptic solutions and the endoscopic applications of such drugs as 10 per cent silver nitrate solution. In the authors' experience, response to this form of therapy is slow.

Embryologically, the urethra and trigone arise from cells which form the female generative tract. Hence the urethra and lower genital tract in the female not only have a common blood, lymph and nerve supply but are under the the same hormonal influence. Many women after prolonged love-making without copulation have low abdominal pain from the unrelieved congestion of the sexual organs, and frequency of urination may develop due to temporary vesical irritability. It is commonly observed that symptoms of "cystitis" are worse on the day after unsatisfactory intercourse and at the time of menses. Symptoms which should suggest the possibility of vesical irritability secondary to tension include frequency without nocturia, or intermittent frequency such as that occurring only in the morning or at bedtime.

In studying these patients it is frequently noted that the initial urinary symptoms came on abruptly after a sexually stimulating situation which for psychological reasons proved unsatisfactory. This appears particularly in cases in which the sexual feelings are repressed—that is, in which the patient is not consciously aware of erotic sensation. A frequent example is the sexually inexperienced or prudish young woman who becomes aware of pelvic fullness owing to sexual stimulus but interprets it as a need to urinate. By denying to herself that she has any arousal she displaces all sexual feelings to the urogenital system and establishes this pattern for tension discharge. It must be emphasized that this is an unconscious process; it is entirely beyond the patient's control and awareness. Once this mechanism is operative, sexual stimuli are responded to by urinary symptoms such as frequency or urgency, especially if sexual arousal is considered wrong. In several cases of married women, observed by the authors, the urological symptoms first appeared when the patients were on the way to or engaged in an extramarital affair.

CASE REPORT

A 27-year-old woman was referred because of complaints of urgency and frequency. Reared in a strict home, in fear of an alcoholic father, she was not permitted to have dates with boys. When 16 years old, the patient went on her first date without the consent of her parents. During the evening, she felt very tense due to fear of punishment and also the excitement of having her first boy friend. Sitting in a restaurant, she felt urgent need to void but was hesitant to ask to be excused. Suddenly she lost control and urinated, much to her shame and embarrassment. From then on she constantly feared a similar mishap. As a result of this constant tension, she felt a need to void frequently, sometimes as often as every hour, and would become panicky if no toilet were available. In marriage, she was unable to respond to sexual stimulation, and intercourse invariably culminated in distressing urgency and frequency. Menstruation also was accompanied by an increase of these symptoms. In recent years, she found that any disturbing situation accentuated the urinary difficulty.

No abnormality was noted in a urological examination. In a cystoscopic examination the urethra was observed to be normal but there was pronounced trabeculation of the bladder.

Under psychiatric treatment, the urgency and frequency diminished considerably as the patient understood the relation of these factors to her tension. Although the symptoms were much improved, there was some persistence because the need to void had become a habit and because organic changes had occurred in the bladder.

The case reported demonstrates how the initial urinary symptoms arise without any awareness of their true significance. The anxiety the patient felt in doing something wrong and the sexual stimulation when the patient was 16 years old were interpreted as a need to urinate. This established a pattern for reacting to subsequent erotic or anxiety-provoking stimuli with symptoms of frequency and urgency. Functional urological disorders of this kind occur most frequently in women. Men with this condition have comparable personality characteristics.

In studying patients with "cystitis" that does not respond to usual therapy, it is noteworthy that many of them unconsciously achieve feelings of erotic pleasure in the ministrations of a physician; manual or instrumental manipulation, particularly urethral dilatation or bladder irrigation, may be a distinct source of pleasure. A colleague reported that a 33-year-old unmarried woman under his psychiatric care was likely to have symptoms of cystitis when sexual outlets were unavailable. At such times, although the urine and the urinary tract were essentially normal, urgency and frequency continued until a course of bladder irrigations was carried out. Under psychiatric treatment, the patient recognized that the urological complaints were expressions of unsatisfied sexual needs.

OTHER PSYCHOLOGICAL FACTORS

Along with the erotic element present in urination, there is also a hostile or aggressive element. The not uncommon use of words or phrases referring to urination to express hostility in everyday language is indicative. Not infrequently noted in study of patients with urinary disorders are intense feelings of anger, often associated with the feelings of sexual deprivation, directed to the sexual partner. Many women with urinary symptoms have deep-seated hostilities toward men and dissatisfaction with their own femininity. In the case of a 35-year-

old woman, recently observed, all these elements were illustrated. The patient had been under some pressure from her mother and sister-in-law and was increasingly resentful. There had long been a struggle between the patient and her husband "to see which one had supremacy." She stated: "At this time my husband was top-dog and I wouldn't respond to him sexually. When I phoned for a psychiatric appointment and was told to wait a week I got mad, felt I was going to burst and found myself going to the toilet all day. From experience, I know that my urinary symptoms are not due to infection but to accumulated anger and frustration." When the patient was first observed, a burning sensation upon urination, and frequency and urgency were still present, but the symptoms rapidly cleared following discussion of the psychic factors responsible.

The functional disorders mentioned thus far are observed most often in women; not many men have functional cystitis. However, both men and women can have inhibition of the urinary stream under stressful situations. Some persons may have difficulty in voiding in public toilets. Usually, upon psychiatric study they are observed to be shy and retiring, unsure of themselves, and to have considerable sexual anxiety.

In cystometric studies carried out by Straub, Ripley and Wolf[6] it was observed that alterations of bladder function might be, in some instances, the only physical expression of emotional tension, or they might occur as part of a general psychophysiological reaction in association with other somatic disorders such as headache, backache, or menstrual irregularities. Pronounced increase in vesical tone could be produced by conversations touching on the patient's emotional problems. Bladder hyperfunction with urinary frequency was associated with a reaction of anxiety and resentment accompanying overt conflict. Bladder hypofunction with urinary retention was associated with emotional repression and withdrawal attitudes.

DISORDERS IN THE MALE

Impotence in its various forms of premature ejaculation, difficult erection, or lack of pleasure in intercourse is present in a very high percentage of the male population. The majority of men have had these difficulties at some period in their lives, and in many it persists through life. Kinsey[1] reported that more than 50 per cent of married men have some degree of premature ejaculation. Many men ejaculate within a few seconds of coital entrance or even before entering. Not everyone so affected seeks medical help. Many accept this sexual disability and go through life with no conscious concern. Others may be concerned and seek help to have it corrected. Many others attempt to deny the problem by a mechanism termed repression, and the anxieties express themselves in other symptoms, sometimes in testicular pain or penile pain, non-specific urethritis, or other dysfunctions of the genital system, but more often in symptoms of less obvious association such as headache, backache, gastric disturbance, and fatigue.

Impotence is rarely owing to organic disease. In most cases it is of psychic origin, nearly always the result of sexual fear.[2] Among the various kinds of sexual fear the commonest are fear of failure, fear of injuring the woman, fear of women, fear of consequences, fear of incest, fear of impregnating. In present-day culture, reaction to sex is mixed. On one hand are taboos on sexual curiosity and activity so that sexual matters are secret and surreptitious, and on the other a tendency to joke and deride. While masturbation is a normal phenomenon, society still considers it as bad, dirty or indecent. Every young man is disturbed by masturbation and nocturnal emissions until he somehow learns that they are quite normal. Other sexual activities which are now known to be biologically sound are anathematized as disgusting or abnormal. Even though sexual impulses are intensely strong in late adolescence and early adulthood, society rules that sexual activity be deferred until marriage so that sexual behavior at this time often is tinged with guilt. Prohibitions against and misinformation about biologically normal function set the stage for greater or lesser sexual difficulty at a later date.

Sexual fear may spring from less obvious roots. An overly affectionate mother will keep her son close to her and consciously or unconsciously try to prevent him from growing up and breaking away. The "silver cord" of novels is no mere figure of speech. A young man, consciously or unconsciously sensing his mother's clinging need, will feel guilt when he goes with girls, guilt that in greater or lesser measure influences his sexual ability. Even marriage does not solve this problem, since the maternal attachment is carried into the marriage; the man unconsciously sees his mother in his wife and fails sexually. The variations on this theme are infinite, but repeatedly the result is the same—some degree of sexual failure.

The growing child in the home where sex is considered nasty or wrong can hardly be expected to have a normal reaction when he reaches maturity. If the father is brutal or violent in action, the child considers sex an aggressive attack and in later years has the feeling that sexual activity is harmful to the woman.

A man who, as a young boy, became head of the family after the father's death—became the mother's husband in practically all respects save one—may have so deep a feeling of responsibility and attachment that he either cannot break away or, if he does marry, may be incapable of performing sexually as a husband.

Another common example is the man whose mother was the dominant force in the home and was contemptuous of or belittling of the husband. From this the young boy gets the impression that women are aggressive, destructive forces and a fear of women develops. As an adult, he, too, fails in sex relationships. (One patient, who was reared in a household ruled by a domineering mother, is com-

pletely impotent with his wife. He can have extramarital affairs without difficulty so long as he feels that he is in control of the situation. If the paramour of the moment becomes possessive or emotionally demanding, he becomes impotent.)

Fear of pregnancy may be present consciously or unconsciously in the male as well as in the female. In his children, a man may experience a continuation of the rivalry and jealousy he had for his brothers and sisters when he was a child.

Pain in the penis, urethra, prostate, testes, scrotum or perineum may be an expression of sexual anxiety. It is probable that in a careful history it will be noted that a patient with any of these symptoms is disturbed by premature ejaculation, by feelings of sexual temptation, or other expressions of sexual inhibition. Such a patient may attribute his failures to some organic defect and, by focusing attention there, stress any pain or discomfort in the genital area which might ordinarily have been transient. The penile or testicular ache is often the end result of sexual excitement occurring during sleep, culminating in erection and abruptly stopped, consciously or unconsciously, on the verge of orgasm.

Many men complain of persistent or recurring urethral discharge which, on microscopic examination, is found to contain no organisms and few, if any, pus cells. Such men generally are excessively sincere and conscientious with considerable guilt about real or fancied extramarital sexual affairs, if married, or sexual activity of any sort if unmarried.[5] If they indulge in any sexual act which they consider wrong, they have intense guilt, anxiety or even depression. They strive for continence, although consciously or unconsciously in a state of sexual excitation. The appearance of a urethral discharge, secondary to the prostatic congestion produced by sexual arousal, stirs up their guilt feelings. To treat this "urethritis" by somatic means is but to increase the feeling of guilt.

Most men with problems of sexual dysfunction have generalized nervous symptoms varying from anxiety tension states to neurasthenia. In dealing with a patient who has innumerable symptoms referred to many different organic systems with variable appearance and inconstant distribution, the possibility of anxiety neurosis should be considered. Careful questioning regarding details of his personal life, especially problems and worries in the sexual realm, will nearly always reveal highly pertinent material. In many cases increased redness of the trigone, prostatic urethra and verumontanum will be observed in cystoscopic examination. These changes are often interpreted as the causes of impotence rather than as the natural result of the sexual difficulties. This erroneous conclusion leads to organic therapy aimed at correcting the hyperemia. Unfortunately, not only are results unsatisfactory but guilt feelings are further increased, for the innocent patient is then convinced that the masturbation which he practiced in his adolescent years has caused severe damage to his sexual organs.

There is no question that some patients have been helped by testosterone, prostatic massage, instrumentation, or operative measures. Results, however, are inconstant. The administration of testosterone has strong suggestive power because the patient feels that a hormonal deficiency is being rectified. Many persons who have spectacular response to hormones do just as well on placebo pills so long as they believe them to be testosterone. The improvement associated with massage or other physical measures may also have a large psychic component. Guilt feelings due to masturbation or other forbidden sexual activity may be assuaged by the pain and discomfort of treatment which unconsciously are considered retributive punishment.

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REFERENCES

1. Kinsey, A. C., Pomeroy, W. B., Martin, C. E.: Sexual Behavior in the Human Male. Philadelphia, Saunders, 1948.

2. Menninger, K. A.: Impotence and frigidity from the standpoint of psychoanalysis, J. Urol., 34: 166, Aug. 1935.

3. Menninger, K. A.: Psychological factors in urological disease, Psychoanal. Quart., 5:488, 1936.

4. Menninger, K. A.: Some observations on the psychological factors in urination and genito-urinary afflictions, Psychoanalyt. Rev., 28:117, Jan. 1941.

5. Rose, W. D.: Urethral discharge as a symptom of psychiatric disorder, Psychosom. Med., 9:273, July-Aug. 1947.

6. Straub, L. R., Ripley, H. S., Wolf, S.: Disturbances of bladder function associated with emotional states, J.A.M.A., 141:1139, Dec. 17, 1949.

7. Van Der Heide, C.: A case of pollakiuria nervosa, Psychoanal. Quart., 10:267, April 1941.

8. Weiss, E., English, O. S.: Psychosomatic Medicine, 2nd Ed., Philadelphia, Saunders, 1950.

Malignant Tumors of Childhood

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SUMMARY

In the past 20 years, cancer in the age group, 0-14 years has become the second leading cause of death by disease. At some ages, notably between 5 and 14, it may be the leading cause of death by disease.

Leukemia is the most frequent form of cancer in childhood, and tumors of the brain are in second place.

An attempt should be made to categorize more accurately tumors stated in reports as "miscellaneous," since in the reports analyzed herein, 15.8 per cent of all malignant lesions were so classified.

AS recently as 1939, one of the foremost authorities on malignant disease in children stated that "cancer is a rare disease in childhood."[2] Less than ten years later malignant disease was, and it is now, the second leading cause of death *from disease* in the age group from birth to 14 years. It is outranked only by pneumonia—a convenient diagnosis which may or may not indicate the fundamental underlying disease process. Other statistics have pointed out that cancer in 1949 was the leading cause of death by disease at age 11; only accidents caused more deaths.[5]

The statement that the cancer age "starts at 40," once so carefully impressed upon medical students, was not only misleading but contributed to the general unawareness of the incidence of this disease in childhood, which in turn led to laxity both by the profession and the laity in the early recognition of certain types of childhood malignant disease which, if treated soon enough, may be cured. A random sample of one year, 1949, in the city of Los Angeles (Table 1) gives a comparison of death rates from cancer, compared with total deaths from all causes. It is significant that although the *number* of deaths from malignant disease was higher in persons more than 45 years of age, the highest *incidence* of cancer in relation to total deaths was in the age group 5-14 years where over a fifth of all deaths were due to this disease.*

There was some justification in 1939 for the statement referred to above, for there has been a pronounced increase in the reported death rates from childhood cancer in the past 20 years. According to statistics of the Metropolitan Life Insurance Company[6] the *increases* in the death rates from the period 1930-1934 to 1943-1947 were as follows: Ages 1 to 4, 28 per cent; 5 to 9, 60 per cent; 10 to 14, 36 per cent. It is not the aim of this report to attempt to explain this apparent increase, but it would be interesting to know how much of it is due to increased skill and use of new techniques in making the diagnosis on the part of the physician and the pathologist.

The purpose of this review is to compare statistics on malignant disease collected at the Los Angeles Children's Hospital from 1942 to 1950, with similar reports from reliable sources over the period from 1930 to 1950. All cases reported from the Los Angeles Children's Hospital were verified by biopsy or postmortem examination, or, in the case of leukemia, by blood studies and/or bone marrow puncture. In assembling the data, the anatomical situation of the tumors has been given first consideration, and no attempt has been made, because of obvious difficulties, to establish the histologic types in any series other than that from the Los Angeles Children's Hospital. Further, leukemia and Hodgkin's disease, which some investigators prefer to exclude, have been included—rightly so, it is believed, since at the present stage of knowledge these diseases cannot be dissociated, in humans, from other malignant conditions. In addition, at the hazard of being inconsistent, neuroblastoma has been included. This has been done because in the Los Angeles Children's Hospital series this tumor is a virtual tie for third place among the tumors listed, and if only for purposes of subsequent review, it should be mentioned. Knowledge gained about this particular type of tumor in the past two decades leads to belief that there may be many cases of neuroblastoma included in the statistics under the headings of lymphosarcoma, "small round cell tumor" or bone tumor. In addition it is a type of tumor which is amenable to treatment. Ten of 40 children in whom neuroblas-

TABLE 1.—*Cancer Deaths, Los Angeles City, 1949*

Age	Total cancer deaths	Total death (All causes)	Per cent cancer of all causes
0- 4	21	1,138	1.8
5-14	26	118	22.0
15-24	26	269	9.6
25-44	275	1,733	15.8
45-64	1,351	6,243	21.6
65 plus	1,570	10,625	14.7
Total	3,269	20,126	16.2

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* Courtesy of John Chapman, M.D., Los Angeles City Health Department.

TABLE 2.—*Malignant Disease, Los Angeles Children's Hospital (Eight Years—1943-1950)*

Disease	Cases	% Total
Leukemia	182	49.0
Brain tumor	66	17.8
Neuroblastoma	24	6.5
Wilms' tumor	24	6.5
Lymphosarcoma	21	5.7
Retinoblastoma	20	5.4
Miscellaneous	34	9.1
Totals	371	100.00
Total admissions		45,460
Per cent of total admissions		0.8

toma was observed at operation in Boston Children's Hospital in the period 1929-1939 were alive from three to eight years after the presence of the tumor was noted.[3]

Table 2 lists the leading type of malignant disease at the Los Angeles Children's Hospital in the stated eight-year period. As in most other series, leukemia leads the list. It is of interest to note the incidence of malignant disease in the number of hospital admissions during this period. The importance of a figure of this kind is doubtful, however, for it depends to some extent upon the specialized activities of a given hospital. For example, in comparing it with a similar computation at the Washington, D. C., Children's Hospital[1] it is noted that the figure given by the latter is but one-quarter (0.2 per cent) of the Los Angeles incidence (0.8 per cent). It is doubtful if there is four times as much childhood malignant disease in Los Angeles as in Washington.

In an attempt to establish some basis for evaluation of the Los Angeles figures, several categories were considered, and it is unlikely that any of them would give an accurate idea as to the true incidence of malignant disease. In addition it would be unfair to state the incidence of deaths from malignant disease in relation to total deaths in this hospital, or to state the number of cases in which malignant growth was noted at autopsy in relation to the total number of cases in which autopsy was done. In regard to the latter point, for example, autopsy figures at the Los Angeles Children's Hospital are distorted by the high incidence of cases of congenital heart disease, which is noted in over 30 per cent of all autopsies. It was considered, therefore, that if some non-fatal condition were picked, a comparison, although not necessarily of importance, might be of interest. As a result, it was decided to compare the number of patients who had malignant disease with the number admitted for tonsillectomy. It was somewhat surprising to note that the ratio was 1:18 (371:6,742).

Table 3 lists the cases of miscellaneous malignant tumors. Some of these cases are, of course, included in the anatomical listing. It is interesting to note that in only three of the 371 cases (0.8 per cent) was the tumor of epithelial origin.

Relatively few pediatric tumor analyses are available for comparison with the present series. In addition, certain specialized hospitals that receive patients with certain kinds of malignant disease do not include data on the age of the patients in statistical reports. It is also difficult to obtain figures as to the incidence of childhood cancer from general hospitals, where the pediatric material may be diluted by the greater numbers of adult cases. The best reports obtainable are from the following sources: Los Angeles Children's Hospital, Washington Children's Hospital,[1] Boston Children's Hospital,[1] Children's Memorial Hospital in Chicago,[1] the University of Chicago,[1] the sum of three series from three other reports[2, 4, 7] and from statistics obtained from the Metropolitan Life Insurance Company.[7] Data from these sources are listed in Table 4. It can be seen that although there are some disparities (due perhaps chiefly to selective admittance of patients with certain types of cancer) there is in general noteworthy agreement as to the relative frequency of involvement of the various anatomical sites.

In Table 4 lymphoma includes leukemia, all types of lymphosarcoma and Hodgkin's disease. Under central nervous system are included all gliomas in the Los Angeles Children's Hospital series, and certain other rarer tumors in other series, such as craniopharyngiomas. Bone tumors are assumed to be primary, but such was the nature of reports in certain series that the author cannot be certain on this point. Tumors of the kidney in the Los Angeles series are limited to Wilms' tumors and one unclassified sarcoma. It is likely that in some other reports neuroblastomas in the region of the kidney are included. Eye tumors include retinoblastomas.

The large number of miscellaneous tumors, both in the group of three series and in the Metropolitan Life statistics, is noteworthy. It would be interesting to know how many of the miscellaneous tumors in both groups were neuroblastomas and how many tumors of the eye are included in Metropolitan's miscellaneous group. It would seem likely that there are a number of each, if the figures from the other institutions are indicative.

The low incidence of bone tumors reported from the various Children's Hospitals as compared with the incidence of such lesions noted in other series is another interesting feature. It is conceivable that specialized orthopedic hospitals receive the great

TABLE 3.—*Miscellaneous Tumors, Los Angeles Children's Hospital (Eight Years—1943-1950)*

	No. Cases
Angiosarcoma	9
Sarcoma, unclassified	8
Carcinoma, adrenal	2
Sarcoma, kidney, unclassified	2
Neurofibrosarcoma	2
Sarcoma botryoides	1
Chondrosarcoma	1
Glioma, optic nerve	1
Lipomyxosarcoma	1
Fibromyxosarcoma	1
Embryoma, testicle	1
Dysgerminoma, ovary	1
Melanoma, eye	1
Synoviosarcoma	1
Osteogenic sarcoma	1
Ewing's tumor	1

TABLE 4.—*Anatomical Sites of Malignant Disease in Children as Reported from Various Sources*

	Children's Hospitals															
	Los Angeles		Washington		Boston		Chicago		U. of Chicago		(3 series) *		Metro. Life		Total	
	No. of Cases	% of Total	No. of Cases	% of Total	No. of Cases	% of Total	No. of Cases	% of Total	No. of Cases	% of Total	No. of Cases	% of Total	No. of Cases	% of Total	No. of Cases	% of Total
Lymphoma	203	55	71	53	60	29	63	62	24	24	182	16	649	45	1252	36.0
Central Nervous System	66	18	14	10	90	42	16	16	63	64	339	30	264	18	852	24.5
Bone	3	1	3	2	—		—		—		236	21	88	6	330	9.5
Kidney	26	7	25	19	60	29	7	7	—		95	8	106	8	319	9.1
Eye	22	6	6	5	—		—		—		96	9	—		124	3.6
Neuroblastoma	24	6	11	8	—		8	8	7	8	—		—		50	1.5
All others	27	7	4	3	—		7	7	4	4	175	16	336	23	553	15.8
Totals	371		134		210		101		98		1123		1443		3480	

* Combined data from three reports[2, 5, 8].

bulk of cases of this type. It is unfortunate that so many "miscellaneous" tumors appear in the reported series—15.8 per cent of the total. It is probable that some of them fit into the other categories listed. It is also possible that if there were more detailed report on tumors included as "miscellaneous," some other specific type of tumor (such as angiosarcoma in the Los Angeles series) might assume a position of importance.

REFERENCES

1. Anderson, R. H., Martin, M. B.: Analysis of all tumors at Children's Hospital over a ten-year period, Clin. Proc. of the Child. Hosp., Wash., D.C., 7:64, Feb. 1951.

2. Dargeon, H. W.: Malignant tumors in childhood, J. Pediat., 15:317, Sept. 1939.

3. Farber, S.: Neuroblastoma, Am. J. Dis. Child., 60:749, 1940.

4. Helmholz, H. F.: Malignant neoplasms in childhood, Proc. Interstate Postgraduate Assembly of North America, 1931, p. 209.

5. Metro. Life Ins. Co. Statistical Bull. 30:9, April 1949, The safest age becomes safer.

6. Metro. Life Ins. Co. Statistical Bull. 30:5, Jan. 1949, Cancer among children.

7. Pack, G. T., LeFevre, R. G.: Age and sex distribution and incidence of neoplastic disease at Memorial Hospital, N.Y.C., with comments on cancer ages, J. Cancer Research, 14:167, June 1930.

Evaluation of a New Method of Dust Control

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SUMMARY

Microscopic dust sampling was done to determine the amount of dust in the homes of six patients who were sensitive to house dust and who had allergic disease that was intractable to treatment. One case was subsequently excluded from the study because of extraordinary circumstances. The remaining five cases were studied with repeated dust counts before and after a water-and-oil emulsion was sprayed in the patient's bedroom to immobilize house dust. In all five cases, the patients had dramatic relief of symptoms after the spraying was done. In four out of five, there was concomitant reduction of the amount of dust in the air as determined by microscopic counting of the dust particles on a glycerin-coated slide. In the fifth case, relief of symptoms was not accompanied by reduction of dust on slides, but investigation revealed an error in control of exposure of the slides.

Although there may be some question regarding the efficacy of desensitization with house dust extract for treatment of allergic disease, there is unanimity of opinion regarding the importance of house dust as an etiological factor in the production of numerous allergic symptoms. Logically, the most effective method of treatment in such cases has been to eliminate, diminish or control in some manner the dust in the immediate atmosphere of a person who has allergic reaction to it. For a long time allergists have been instructing dust-sensitive patients to eliminate as much dust as possible from their environment by proper and frequent cleaning, ventilation, use of dust-impervious encasings and the avoidance of articles which are likely to harbor dust.[6] In this so-called dustproofing, which has been partially successful, the major emphasis has been directed at the bedroom on the theory that in this room the patient is exposed to the greatest concentration of allergenic dust for the greatest period of time.

It must be emphasized at this point that the term "house dust" is a generic one actually meaning atmospheric particles, apart from pollens, likely to cause allergic reactions—not merely particles of earth, but rather a mixture of dirt, feather particles, cotton, kapok and wool fragments and, indeed, almost anything else likely to be floating in the air of a room. The origin of house dust is worthy of some discussion. First, of course, the dust that may enter a room through an open window may consist of any particulate matter such as street dust, coal dust and chalk dust. Then, particles of wool from the rug on the floor are likely to be scuffed by the feet and raised into the atmosphere, as are particles of cotton linters dropping from an ordinary mattress. Fragments of disintegrated feathers escaping from loosely encased pillows, dander and hair from house pets, scales of moths and other insects, human hair, cattle hair and jute from rug pads, bacteria, molds, tobacco particles, parts of plants, insecticides and lint from clothing are among the things which make up what is loosely called "house dust."

Whatever the origin of this dust it collects on furniture, rugs, draperies, picture frames, ornaments, toys and many other surfaces within the room. Present methods of house dust control are directed mainly at preventing circulation of the particles in the air by cleaning surfaces with a damp cloth, eliminating articles of furniture which are likely to produce, collect and harbor dust, sealing or filtering to prevent the entry of dust from outdoors, and encasing in tightly seamed covers such articles as pillows and mattresses that might shed cotton and feather particles.

As these methods have been only partially successful, it would appear that a more efficient method of control would be one which would not pretend to eliminate house dust from a room, but rather would keep the dust settled and sealed so that it could not become airborne. Such a method—it originated in attempts to control the spread of respiratory diseases among crowded troops in World War II—has become available.

During the early phases of the war, a serious problem of respiratory infection was encountered, resulting from relatively crowded living conditions of thousands of men in various military establishments. At the outset of the conflict, both Great Britain and this country established groups of qualified medical authorities to study this problem and, if possible, to devise methods to reduce the incidence of respiratory infections in barracks, hospitals and other crowded areas. It had previously been established by the work of Wells and co-workers[7, 8, 9, 10] that respiratory infective agents are usually transmitted, via the air, from an infected person to a healthy one—not only in direct inhalation of infected droplets discharged in coughing or sneezing, but frequently in breathing dust made up in part of infected droplets that had dried. Wafting these particles into the air by sweeping, ventilating, vacuum-cleaning, shaking of bedclothes and similar operations is of prime importance.

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Of several methods investigated to control airborne bacteria, and incidentally dust, the most effective was immobilization of the particles by coating floors, bedclothes and other dust-producing surfaces with oil. The procedure employed was to spray an emulsion of white mineral oil in water, using Triton NE (a 30 per cent aqueous solution of an aryl-alkyl-polyether alcohol) as an emulsifying agent.[3, 4, 5]

There is general agreement that these oiling procedures are effective. Loosli[5] reported that "extensive studies by English and American investigators have shown that oil is the most highly effective and economical compound for the treatment of surfaces and fabrics for the suppression of dust and lint."

Extension of the use of this oiling method to control allergenic house dust seems a logical procedure. Using an oil compound in paste form, emulsifying it in warm water with an egg beater, then distributing it with a fine-holed garden water pot, Coca[1] applied the oiling process to the homes of six dust-sensitive patients. He used slowing of the pulse, lowering of blood pressure and relief of other symptoms as criteria and concluded that immobilization of house dust by this oiling method was an effective procedure in the treatment of patients with allergic disease caused by dust. At the 1950 meeting of the American Academy of Allergy, Arbesman, reporting for the therapeutic committee, stated that the oiling procedure was a valuable adjunct in the treatment of house dust sensitivity. So far as is known, there have been no controlled experiments performed to correlate and determine the actual dust count of a room before and after an oiling procedure and to relate them to relief of allergic symptoms.

The purpose of the present study was to evaluate the efficiency of immobilization of allergenic house dust in a room as judged by actual dust sampling before and after treatment of a room with an oil-and-water emulsion applied to rugs, draperies and bedclothing.

Bedrooms of dust-sensitive patients who had not responded satisfactorily to the accepted methods of treatment and control were chosen for this experiment. The material used for "oiling" was a mixture of (1) silicone oil, a material used as an anti-foaming agent in non-carbonated beverages, (2) triethylene glycol, (3) diethylene glycol monoethyl ether, (4) mineral oil, USP, (5) sodium nitrite, (6) alkyl dimethyl benzyl ammonium chloride (employed in minute amounts for its fungicidal action in the initial phase to preclude the growth of fungi on the water-wetted fabrics during the six- to 12-hour drying period). This is a liquid preparation that has only to be mixed with water before it is applied.* Dust counts were done in individual homes in circumstances as uniform as possible.

The most extensive literature on dust sampling methods is in connection with occupational pulmonary diseases.[2] For the control of pneumoconiosis, the generic term which includes silicosis, silicatosis, anthracosis, siderosis, and asbestosis, it is important to know the nature of the dust, the particle size, quantity of dust in the atmosphere and length of exposure to dusty air. For this purpose, very exact and complicated methods of dust sampling were devised. These include those of condensation, filtration, electrostasis, resistance, impingement, dust-counting photo-electric cells and petrographic methods.

As the study was primarily to determine the effect oil-spraying might have upon the amount of dust in the air of a room, it was felt that counting dust particles on glycerin-coated slides exposed for measured periods in a bedroom before it was sprayed, on slides exposed in the same room after the spraying, and on slides exposed concurrently in a contiguous room which was not sprayed would supply adequate data. It was recognized, of course, that the number of particles settling on a slide during a given time depends not only on the number of particles in the air, but also on the rate at which they settle; and that particles of dust or lint which have been impregnated with oil will settle more rapidly than will others. The authors were also aware of the conclusions reached by Forbes, Davenport and Morgis[2] in an exhaustive review of the literature with a bibliography of 657 references. They stated: "A condition as to air dustiness found in one sample in a certain place is unlikely to be anything like another sample taken immediately afterwards in the same place and in the same manner; this is true where the sampling is done instantaneously by grab method or over a period of minutes. In other words, the technique of determining quantity of dust particles in the air is by no means definite, accurate, fair or dependable, not only as regards conditions between different [industrial] plants but between time periods in the same place in any one plant." However, the results of preliminary studies indicated that if a glycerin-coated slide were exposed in a room for a period of six consecutive hours the collection of dust particles on the slide would be sufficient to be of statistical significance for the purpose of the present study.

PROCEDURE

Four slides were exposed in each of two bedrooms in six houses in which patients lived. They were placed in the four quadrants of the room in approximate juxtaposition, at a height of three to five feet. After normal dusting and cleaning was carried out, the windows and doors of the rooms were closed, and the slides were exposed for six hours. No one was permitted to enter the rooms during that period. Three such exposures, on three successive days, were made and the dust particles on the slides were counted. Subsequently, one of the two rooms under investigation—in all cases the room in which the patient slept—was dust-proofed with Allergex® by spraying the diluted emulsion into rugs, draperies, upholstered furniture and mat-

*This product is marketed under the trade name of Allergex and was supplied for this study through the courtesy of Mr. Irwin Cornell, the Carnegie Chemical Manufacturing Company, Los Angeles, California.

TABLE 1.—*Average Number of Dust Particles per Low Power Microscopic Field on Slides Exposed in Patient's Bedroom Before and After Spraying, as Compared with Count on Slides Exposed Simultaneously in Another Bedroom, in Same House, Not Sprayed.*

EXPOSURE	Case 1*		Case 2		Case 3		Case 4		Case 5		Case 6	
	PBR†	CBR†	PBR	CBR	PBR	CBR	PBR	CBR	PBR	CBR	PBR	CBR
Before Spraying												
First	326	265	54	80	37	40	132	122	76	112	142	150
Second	294	280	62	66	26	51	118	130	82	116	158	125
Third	310	275	66	71	38	32	126	110	90	124	150	100
After Spraying												
1 day	.....	.....	60	60	8	56	6	92	9	108	15	128
3 days	.....	.....	72	87	6	48	10	120	6	132	17	196
7 days	.....	.....	68	76	4	59	15	116	11	145	20	101
1 month	.....	.....	58	82	10	61	13	138	15	103	25	126
3 months	.....	.....	65	89	8	50	9	114	19	150	42	184

* Excluded from study because dust was greatly increased by excavation project nearby.
† PBR = Patient's bedroom; CBR = Control bedroom.

tresses. An ordinary compressed air paint sprayer was used. The other bedroom was not so treated, but in most of the homes the treatment was applied to the entire house exclusive of the control bedroom. Slides were again exposed in both the treated and the untreated bedrooms. Slides were again exposed in both the treated and the untreated bedrooms one day, three days, one week, one month and three months after the application of Allergex. The technique of exposure and of dust counting was the same on all occasions.

The slides were viewed under the low-power objective of a microscope. At least ten such fields on different areas of each slide were counted. The average of these was the accepted count. In those instances in which the number of particles was extremely high, the counts were estimates based on a count of a segment of the field.* No attempt was made to identify the kind of particles (dust, feathers, wool, cotton, etc.) but each fragment from 0.5 to 100 microns in size was included in the count.

RESULTS

Results of the dust sampling before and after oil treatment are outlined in Table 1. The data on Case 1 were distorted fortuitously and for that reason were excluded from this study. In that case, after exposure of the slides prior to oil treatment, it was noted that the number of dust particles on the slides was enormous as compared with the amount of dust in other cases in this study as well as with other cases in the authors' experience. Investigation revealed that during the period of preliminary exposure of the slides, a building site adjacent to the home was being excavated. Obviously, this case was unsuitable for the study. However, an interesting observation in this case was that during the period of excavation, the symptoms of the patient were greatly exaggerated. It is felt that this case is significant for two reasons. One, it appears to verify the validity of the dust-sampling technique used. Second, it emphasizes the importance of external factors such as excavations, winds, etc., on the symptoms of the patient as well as on the amount of dust in a room sealed by ordinary methods.

In Case 2 (Table 1) it will be noted that there was no decrease in the amount of dust in the patient's bedroom following the use of Allergex. The patient, however, had pronounced relief of symptoms. Investigation after the studies were concluded revealed that, during the exposure of the slides following the oiling procedure, two young children in the house went in and out of the bedroom several times without the mother's knowledge.

CASE REPORTS

CASE 2, *Table 1.* The patient, seven years of age, was first observed in May 1949 with complaint of stuffiness of the nose, episodes of hacking cough with some wheezing and occasional watering of the eyes. Upon physical examination the only abnormalities noted were allergic reaction in the nasal mucosa and mild conjunctival hyperemia. Results of skin tests were positive for the common local grass and weed pollens, house dust and molds. Desensitization treatment was instituted with complete subsidence of the hacking cough and stuffiness of the nose. During the course of this treatment the symptoms referable to the eyes became aggravated and in May 1950 an ophthalmologist was consulted. In smears and scrapings from the conjunctivae, a preponderance of eosinophils and the presence of eosinophilic granules were noted. More frequent injections of larger doses of antigen were given. This resulted in some relief of symptoms, but itching of the eyes and the presence of a stringy secretion persisted. After the patient's bedroom was sprayed with Allergex and water there was rapid relief of symptoms and disappearance of discharge. At the time of this report, there had been no recurrence.

CASE 3, *Table 1.* A 35-year-old motion picture script writer had been under the care of two otolaryngologists for treatment of vasomotor rhinitis for a period of three years. The principal complaint was paroxysmal attacks of sneezing, stuffiness of the nose and continual rhinorrhea, most pronounced during the early morning hours. Upon physical examination, the previous diagnosis was confirmed. Numerous eosinophils were noted in a smear of material from the nose. Skin test reactions were negative with the exception of a four plus reaction to dust. Desensitization and the institution of dust precautions gave partial relief, but the symptoms continued until the patient's home, with particular emphasis on the bedroom in which he slept, was treated with Allergex. (One bedroom was not sprayed, as is noted in Table 1.) Immediately after this procedure the symptoms

* The slide counts in this study were done by Orville J. Golub, Ph.D., of the Bio-Science Laboratories, Los Angeles.

abated. Desensitization was discontinued. To the date of this report there had been no recurrence of symptoms. When last observed, the nasal mucous membrane was normal.

Case 4, *Table 1.* A male student 15 years of age had had some form of allergic disease nearly all his life—eczema in infancy and hay fever and asthma from the age of nine. When first observed, the patient had been under the care of an allergist, had had sensitivity tests on several occasions, and was being immunized against pollens and dust with but partial success; the hay fever was relieved but the asthmatic paroxysms still occurred at irregular intervals. From the history it appeared that the attacks were worse during weekends when the family went to a summer home at the beach. The parents said that it was difficult to free the summer home from house dust since it was closed and unoccupied during the week. The house (one bedroom excepted) was dust-proofed with Allergex and from that date on the patient had no more asthmatic attacks. The hay fever symptoms remained about the same.

Case 5, *Table 1.* The patient, a nurse 33 years of age, complained principally of severe bilateral frontal headaches that occurred mostly in the evening and early morning hours. The condition had existed six years. Results of physical examination, with particular attention to the nasal passages, were essentially normal, and no abnormality was noted in x-ray films of the sinuses. In examination of the blood, eosinophilia (7 per cent) was noted. Skin tests for allergic sensitivity were carried out and there was a two-plus reaction to dog epithelium, chicken feathers, goose feathers, and house dust. Dust precautions, substitution of rubber foam pillows for feather pillows in the bedroom, and removal from the bedroom of all upholstered furniture that contained feathers was effected. At the same time immunization against mixed feathers and house dust was started. There was no history of contact with dogs. At the end of seven months of therapy, there was no discernible change. The bedroom and the rest of the house except one bedroom was then dust-proofed with Allergex, following which the patient had pronounced relief. Immunization was discontinued but the avoidance of feather contact was adhered to. When the patient was last observed, the headaches had not returned.

Case 6, *Table 1.* A 15-year-old girl who had been under medical care seven years for bronchial asthma had not benefited from treatments given by several allergists. Skin reactions to allergenic agents were negative except for three plus reaction to cat epithelium and house dust. Dust immunization had been carried out and dust precautions and the avoidance of cats had long been adhered to but with only partially good results; use of antiasthmatic mixtures, with occasional injection of epinephrine, still was necessary to keep the patient free from attacks or to relieve dyspnea. After the patient's home (one bedroom excepted) was treated with Allergex, she had considerable relief: Wheezing was much less pronounced, the breath sounds became nearly normal, and the rales abated altogether. All other treatment was ultimately discontinued and the patient, at the time of report, had had no attacks in a period of six months.

CONCLUSIONS

Certainly, a study of this nature is not necessarily conclusive. First, the symptoms of allergic disease are subject to many variables and any interpretation of the cause of relief is open to question. This, of course, is true of any clinical study. Although the number of cases studied in this series is small, it is felt that since the cases chosen were resistant to good, accepted management, the dramatic relief following use of Allergex spray for dust-proofing can reasonably be considered indicative. Second, the method of dust sampling used in this study (or, as a matter of record, any technique of microscopic counting, including techniques accepted for counting other allergens, such as pollens and molds) may not always give accurate data.

However, despite the possible inaccuracies implied in a study of this nature, several conclusions can be drawn. First, in one case (Case 1, Table 1) in which unusually high counts were obtained, the dust sampling method used was validated, at least in part. Second, in all cases the patients had dramatic relief of symptoms following the dustproofing of their rooms with Allergex emulsion. Third, in four of the five cases there was a decrease in the number of dust particles counted on exposed slides concomitant with relief of symptoms. In the one case in which relief of symptoms occurred without accompanying decrease in dust (Case 2, Table 1) an error in technique was noted. In the authors' opinion, proper application of Allergex will reduce the amount of dust in a home and will serve as a useful and important adjunct in the treatment of allergic disease due to house dust sensitivity.

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REFERENCES

1. Coca, Arthur F.: Dust seal, its use in the avoidance of "house dust" by dust sensitive patients, Ann. Allergy, 6:506, Sept.-Oct. 1948.

2. Forbes, J. J., Davenport, S. J., and Morgis, G. G.: Review of Literature of Dusts, United States Department of the Interior, Bureau of Mines, Publication No. 478, 1950.

3. Loosli, C. G. and Robertson, O. H.: Recent studies on the control of dust-borne bacteria by treatment of floors and bedclothes with oil, Am. J. Med. Sci., 209:166, Feb. 1945.

4. Loosli, C. G., Wise, H., Lemon, H. M., Puck, T. T., and Robertson, O. H.: The oil treatment of bedclothes for the control of dust-borne infection, II. The use of Triton oil emulsion (T-13) as routine laundry procedure, Am. Jour. Hyg., 43:105, March 1946.

5. Loosli, C. G.: Dust and its control as a means of disinfection of air, report of the referee, Am. Jour. Pub. Health, 37:353, 1947.

6. Shure, N.: Environmental survey of the diagnosis of allergic disorders, California Medicine, 69:120, Aug. 1948.

7. Wells, W. F., and Wells, M. W.: Air-borne infection, J.A.M.A., 107:1698, Nov. 21, 1936.

8. Wells, W. F., and Wells, M. W.: Air-borne infection, J.A.M.A., 107:1805, Nov. 28, 1936.

9. Wells, W. F., Wells, M. W., and Mudd, S.: Infection of air: bacteriological and epidemiological factors, Am. Jour. Pub. Health, 29:836, Aug. 1939.

10. Wells, W. F., Wells, M. W., Mudd, S., Lurie, M. B., and Henle, W.: Air-borne infection and experimental air-borne disease, Pub. No. 17 of the A.A.A.S., pp. 284-289.

The Problem of the Mentally Defective Child

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SUMMARY

Continued effort is necessary not only to prevent mental deficiency but to find methods of treating it. Meanwhile, physicians must have a keener appreciation of the feelings of the parents about their retarded children and must interpret the implications of the problems in a way the parents can understand. Further community effort is necessary to provide institutional and foster home care for those who need it. Educational and training programs should be extended and developed for all those who can benefit from such programs.

The problem of mental deficiency is not that of the parents alone, nor of physicians, nor of the psychologists, nor of the social workers, nor of the educators. It is a problem which requires the cooperation of all these groups for solution.

FROM time to time every physician is faced with the problem of how to handle the family of a mentally defective child. How much should he tell them? What advice should he give them about keeping the child at home? In many instances there is nothing that can be done for the child, but there is a good deal that can be done for the family. Experience at the University of California Hospital, in both the pediatric outpatient department and the cerebral palsy clinic to which many defective children are referred, indicates that the approach to the problem of the mentally defective child by many physicians—both general practitioners and pediatricians—leaves much to be desired.

The following discussion is designed to give an approach to this problem which has met with some success.

CLASSIFICATION

The following classification of intelligence is taken from Terman:

Range in I.Q.	*Classification*
0- 25	Idiot
25- 50	Imbecile
50- 70	Moron
70- 80	Borderline deficiency
80- 90	Dullness
90-110	Normal or average intelligence
110-120	Superior intelligence
120-140	Very superior intelligence
140 and above	Genius or near genius

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Presented before the Section on Pediatrics at the 80th Annual Session of the California Medical Association, Los Angeles, May 13-16, 1951.

This presentation is concerned with the children who fall into the first three groups—that is, idiots, imbeciles, and morons.

INCIDENCE

At a meeting of the New Jersey Institute of Mental Deficiency held at Rutgers University in October 1950, Dr. Lloyd N. Yepsen, director of classification and education of the New Jersey State Department of Institutions and Agencies, stated that there were 1,500,000 mentally defective inhabitants in this country. This is 1 per cent of the population. However, only 10 per cent of the country's mentally deficient are in institutions. The cost to the taxpayers for caring for these persons is staggering—$1,500,000,000 a year. An additional 2 per cent of the population is in the borderline group.

FACILITIES IN CALIFORNIA

There are four state institutions in California for mental defectives: Sonoma State Home, Pacific Colony, and two smaller units, at DeWitt and at Modesto. The enrollment in these institutions as of March 1950 was: DeWitt, 813; Modesto, 460; Pacific Colony, 2,016; Sonoma, 3,363; total, 6,652.

Private institutions provide care for an additional 800 persons, and there were approximately 11,000 children enrolled in special classes for the mentally retarded as of the end of the school year 1949-1950. In addition, the state provides supervisory service to approximately 1,000 persons previously institutionalized. There are an estimated 2,000 persons on the waiting list for the state institutions. Institutionalization has been recommended for many more children but, because of the long waiting lists, parents have not made any attempt to apply for such care. Additional construction is now under way, or planned, to provide more institutional care for mental defectives. When this has been completed it will be possible for the state to provide institutional care for approximately 10,000 children. This, however, will still not meet the needs.

PREVENTION AND TREATMENT

Alleviation of the problem of mental deficiency is partly dependent on recognizing and eliminating the causes, and averting the occurrence of such conditions. In recent years there has been a good deal of interest in the prevention of congenital and developmental anomalies. The report of Gregg,[5] regarding the effects on the fetus of rubella in the pregnant woman, has focused attention on infections in general in the early part of pregnancy as a possible cause of mental deficiency, cataracts, and congenital heart disease. Numerous reports have confirmed this effect of rubella. Permitting girls to be exposed to

rubella before reaching the childbearing period is an obvious answer to this problem.

Another infection which causes little or no illness in the mother but causes severe damage to the fetus is toxoplasmosis. In addition to mental deficiency, this infection produces hydrocephalus, chorioretinitis, visceral changes, and is responsible for convulsions in the victim. The diagnosis can be made by finding roentgenologic evidence of calcification in the brain substance, by specific skin tests, and by immunologic studies. Further work must be done in order to recognize carriers of infection and to prevent invasion of the fetus.

More knowledge is needed with regard to the prevention of cretinism and mongolism. Benda[3] proposed the thesis that mongolism is associated with insufficiency of pituitary function, just as cretinism is due to thyroid deficiency. Nevertheless, endocrine substitution therapy has not produced beneficial effects in cases of mongolism.

With the demonstration that Rh incompatibility is responsible for erythroblastosis fetalis,[7] there has been an increased interest in this problem. The only complication is kernicterus, occurring in 15 per cent of the infants who survive, which is characterized by athetosis and in some cases by mental deficiency. Increased recognition of the possibility of Rh incompatibility, with prenatal blood studies and preparation to treat the infant immediately after birth, should lead to protection of the infant. A new approach to the problem is suggested by the work of Damashek and co-workers[4] who showed that continued administration of adrenocorticotropic hormone (ACTH) in cases of hemolytic anemia with auto-immunization results in pronounced reduction of antibody activity. Theoretically, then, when trouble is anticipated, it might be possible to treat a pregnant woman in the last few weeks of pregnancy with ACTH or cortisone, in the hope of interfering with Rh antibody activity. If there is an interference with the antigen-antibody reaction, as has been suggested, then treatment of the affected infant for the first few days of life with ACTH or cortisone might be of value. The availability of these drugs is too recent to have permitted enough clinical trial to attest their value for this purpose.

In addition to the prenatal conditions which produce mental deficiency, the factors of birth which may cause brain damage must be considered. Adequate prenatal and obstetrical care will decrease the number of cases of mental deficiency associated with anoxia and trauma at birth.

Prevention of accidents and infections which attack the central nervous system in the postnatal period will also work toward reducing the numbers of persons with mental deficiency. On the other hand, improvement in techniques for saving the lives of babies traumatized at birth, and the availability of drugs for treating types of meningitis which were once considered fatal, results in saving many infants who may be mentally deficient because of severe brain damage.

Although Zimmerman and his co-workers[9] indicated that glutamic acid has a beneficial effect in the treatment of the mentally deficient, the author's experience has not borne this out. Other investigators[6, 8] have been unable to confirm any significant improvement with this drug.

More recently, there have been attempts to produce mental improvement by increasing the flow of blood to the brain. Beck and co-workers[1] described a method of anastomosing the external carotid artery and the internal jugular vein. Belnap[2] reported an improvement of slight degree in 37 per cent of mentally defective patients operated upon—the greatest increase in intelligence being observed in the 40 to 60 I.Q. range. However, Beck indicated that this is a new approach to the problem, rather than an acceptable and complete solution. Even if this is borne out by other investigators, it seems that the little improvement obtained in the group with so little intelligence would not be significant enough to warrant subjecting the retarded child to such an operation.

DEALING WITH PARENTS

Most parents visiting a physician with a mentally defective child, even though they suspect the child's retardation, often feel that this is a temporary situation and hope that all that is needed is a specific medicine or the proper school or teacher. At first they feel sure that the child who is slow will eventually catch up. It is only after many years of watching the child's slow rate of development that they finally realize that the child is destined to be permanently retarded.

Often this lack of understanding of the prognosis is aided and abetted by the physician, who refuses to tell the family the true state of affairs for fear of upsetting them, even when he suspects it. Meanwhile, the parents go on expecting the child to outgrow the condition; or, because of a mistaken diagnosis of hypothyroidism, the child is placed on a long course of thyroid therapy which temporarily raises the hopes of the parents. Often parents who find out the true state of affairs only after several years indicate their severe resentment of the physician who has not told them what to expect.

On the other hand, there is the physician who, recognizing serious retardation after a cursory examination, will tell the family very bluntly the nature of the child's condition and advise immediate institutionalization without considering the family's feelings in the matter. As a result of this, the parents often leave, feeling bitter toward the physician, and seek other physicians or non-medical practitioners who will tell them their child will eventually be like others.

No matter how obvious the retardation is to the physician, he should take a careful history and do a complete physical examination, as he would for any other child. A psychometric examination by a psychologist should also be done. Other examinations, such as roentgenograms of the skull, electroencephalograms, and pneumoencephalograms should be carried out as indicated. After a complete evaluation has been done, the family is more likely to accept

the physician's appraisal of the child's limitations and prognosis.

In advising the family of the results of the psychometric testing, such terms as idiot, imbecile, or moron should be avoided. These terms have connotations which the layman finds difficult to accept. It would be better to express the result in terms of mental age. One can often get the parents to correctly estimate the mental age of the child, particularly if there are other children in the family. The parents would be indignant if they were told their six-year-old child, with an I.Q. of 33, was classified as an imbecile, but they readily accept the statement that he was able to perform no better than a two-year-old, since they themselves have observed this.

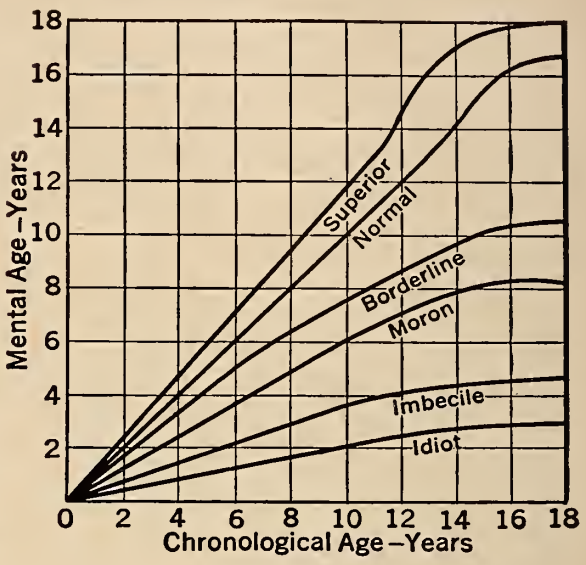
Parents may derive false hope because their defective child eventually learns to walk or say a few words. This makes them feel that all will be well, particularly if a physician has told them that the child will never improve. The child's new attainments make them feel that the physician was wrong, and that their child will eventually catch up and be normal. Of course, what the physician meant was that the child's I.Q. would not improve; he neglected to explain that the child would develop within his own limitations. A convenient, and visual way of demonstrating to parents what a child's progress in mental development will be, is by means of a chart which can be drawn very easily (see Chart 1). In this way, the prognosis and mental ability can be demonstrated very quickly and clearly.

A physician should be careful in recommending institutionalization, since placement in state institutions for the mentally deficient is difficult to accomplish immediately. These institutions are woefully overcrowded and they have long waiting lists. Furthermore, many families cannot accept the idea of placement away from home, at least on the first interview. Even when it seems the wisest procedure, it would be better to wait and not press the issue. In many instances, the parents eventually accept such advice but they do not feel they are doing the right thing and cannot avoid a feeling of guilt. In some cases, the families have made a good adjustment, even though the child is kept at home, particularly if it is an only child and there is no hope of having other children. There is no need to insist on institutional care in such instances, as long as the parents are willing and able to care for the child.

It may take several visits, over a period of months, before the impact of the child's condition finally registers on the parents. During this time the physician can be guiding the family, always honest and sympathetic in his approach, and answering questions as the family presents them. Parents cannot understand what is so obvious to the physician and it takes time for the implications to penetrate.

Parents usually want to know about the possible outcome of subsequent pregnancies. As most cases of mental deficiency are not familial or hereditary, it is possible to reassure the parents in this regard —without, however, guaranteeing the outcome.

Chart 1.—Mental growth of normal and subnormal children. Taken from Holt, L. E., Jr., and McIntosh, R.: Holt's Diseases of Infancy and Childhood, D. Appleton-Century Co., Inc., New York, 1940.



RECOMMENDATIONS

The ultimate answer to the problem is not necessarily that of providing more institutions for all mentally defective persons, although many more beds are needed for the many who cannot be domiciled and for whom families cannot afford private placement out of the home.

State institutions which are now caring for such persons should be providing more than a custodial program. By training and education some of the high grade defectives can be made more nearly self-sufficient and take their place in society. Improvement in training programs is now being made, under the direction of Dr. Frank F. Tallman, Director of Mental Hygiene for the State of California.

The development of foster homes for children who cannot be cared for in their own homes would relieve the state of the financial burden of providing facilities. Many families would be willing to pay for the care of their child in a private home, if such a home could be found.

Sheltered workshops should be organized for the older mentally defective persons who might be trained to do useful work under supervision and who would thereby be less of a burden to their families.

Sterilization should be considered for the child before he or she reaches adolescence, not only because of the danger of the hereditary transmission of mental deficiency but because of the danger of sexual attack by the irresponsible male and of sexual submission by the physically mature but mentally immature female.

School facilities should be developed in those communities where they are not now available, in order to provide the particular kind of schooling from which mentally defective children might bene-

fit. Just as the institutionalized child should receive proper training and education, so should similar opportunities be given the children who remain in their own communities, in order to make them as nearly self-sufficient as possible.

Parent training classes should be developed in communities under such auspices as Adult Education Division of the Public Schools. Such opportunities may also be developed around Parent-Teacher Association groups associated with the schools for the mentally retarded. These classes should provide parents with help in understanding the problems of their children and assistance in training the children for some useful purpose.

Members of organized parent groups can assist each other in meeting individual problems with their children. This can be particularly useful with professional guidance by someone familiar with the problems of the mentally retarded.

REFERENCES

1. Beck, C. S., McKhann, C. F., and Belnap, W. D.: Revascularization of the brain through establishment of a cervical arteriovenous fistula, J. Ped. 35:317-329, Sept. 1949.

2. Belnap, W. D.: Cervical arteriovenous anastomosis in treatment of mental retardation, convulsive disorders and cerebral spasticity, Proc. Scientific Sessions of Am. Academy for Cerebral Palsy Meeting Feb. 1950.

3. Benda, C. E.: Mongolism and cretinism, New York, Grune and Stratton, 1946.

4. Damashek, W., Rosenthal, M. C., and Schwartz, L. E.: The treatment of acquired hemolytic anemia with adrenocorticotropic hormone (ACTH), N.E.J.Med., 244:117-127, Jan. 25, 1951.

5. Gregg, N. McAlister: Congenital cataract following German measles in the mother, Tr. Ophth. Soc. Australia, 3:35-46, Oct. 15, 1941.

6. Kerr, William J., Jr., and Szurek, S. A.: Effect of glutamic acid on mental function, Pediatrics 5:645-648, Apr. 1950.

7. Levine, P., Burnham, L., Katzin, E. M., and Vogel, P.: The role of iso-immunization in the pathogenesis of erythroblastosis fetalis, Am. J. Obst. & Gynec., 42:925-927, Dec. 1941.

8. Loeb, H. G., and Tuddenham, R. D.: Does glutamic acid administration influence mental function? Pediatrics, 6:72-77, July 1950.

9. Zimmerman, T., Burgemeister, B. B., and Putnam, T. J.: A group study on the effect of glutamic acid upon mental functioning in children and in adolescents, Psychosom. Med. 9:175-182, May 1947.

Infraclavicular Chest Wall Tumors in Hodgkin's Disease

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SUMMARY

In six of 91 cases of Hodgkin's disease observed over a three-year period, a tumor mass filling the infraclavicular hollow was noted. It was on the left side in all instances. Although in four cases it was the only superficial manifestation of Hodgkin's disease for a long period, in all cases there were ultimately other areas of involvement. The lesion did not occur in any of 81 cases of lymphosarcoma observed concurrently.

NINETY-ONE patients with Hodgkin's disease were observed in a period of three years. In six of them a rounded mass below the clavicle (Figure 1), or an infiltration which filled out the infraclavicular hollow (Figure 2) was observed. This tumor was present on the left side in all cases, appeared to be infiltrative rather than lymphadenopathic, and was often accompanied by pain and sensory changes in the arm, and venous obstruction with edema. In one patient Horner's syndrome was present. No specific changes were noted in a roentgenogram of the chest other than an occasional slight increase in soft tissue density. This manifestation was not observed in a group of 81 patients with lymphosarcoma.

CASE REPORTS

CASE 1. A white male aged 21 first noted pruritus and malaise. A left cervical node appeared, followed by right cervical and axillary nodes and evidence of mediastinal widening. The diagnosis was made after biopsy of the left cervical node. The patient received roentgen therapy with some relief. After two years a left infraclavicular mass appeared which obliterated the infraclavicular fossa and gradually extended into the axilla. This was associated with numbness and tingling in the left hand followed by intense pain in the forearm and shoulder and, later, by anesthesia of the dorsum of the left hand and the lateral half of the fourth and fifth fingers. Atrophy of the left arm, forearm, and intrinsic muscles of the hand followed. Venous drainage was obstructed and this resulted in edema in the arm and the development of collateral venous circulation. There was little response to intensive roentgen and nitrogen mustard therapy. Six months later the mass was stony hard and measured 5x5x1.5 cm. At this time the patient was otherwise quite well. However, the course was gradually downhill and he died in another hospital three years after onset.

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Figure 1.—Infraclavicular tumor mass. Note obliteration of infraclavicular hollow and absence of other cervical tumor masses.

Figure 2.—Obliteration of infraclavicular hollow by flat infiltrating mass. Note the massive edema of the left arm. None of the other cervical lymph nodes were enlarged.

CASE 2. A 21-year-old white male noted night sweats, loss of weight, fever, malaise and fatigability. A lymph node biopsy was performed upon the appearance of generalized lymphadenopathy. Subsequent to the diagnosis the patient responded well to nitrogen mustard and roentgen therapy. A year later a rounded left infraclavicular mass appeared and was soon followed by the appearance of a left axillary mass. Roentgen therapy was directed to this lesion with good response.

CASE 3. Hodgkin's disease was diagnosed in a 52-year-old white male diabetic patient by lymph node biopsy. There was good response to both roentgen and nitrogen mustard therapy. Two years later the patient noted a swelling in the left infraclavicular area which was associated with intense

and increasing pain down the ulnar aspect of the left arm. Subsequently he began to have chills, night sweats and pain in the left side, radiating around the chest at the level of the ninth rib. Upon examination the patient was observed to be febrile and considerably deteriorated, and to have Horner's syndrome on the left side. He stated that during profuse night sweats no sweat formed on the left side of his face. A small lymph node was palpable in the left posterior axillary fold and there were shotty inguinal nodes. The patient did not respond to therapy, the mediastinal involvement progressed, and he died after two and a half years of illness. At necropsy it was noted that the infraclavicular mass was a fibrotic infiltration binding the subclavian artery and the brachial plexus and extending under the clavicle into the supraclavicular fossa. In histologic examination, almost complete destruction of neoplastic elements, presumably by therapy, was noted. Sparsely cellular, mature collagenous fibrous tissue, and scattered clumps of macrophages were observed. In examination of numerous lymph nodes throughout the chest and in the retroperitoneum the histologic pattern of Hodgkin's disease was noted.

Case 4. A 20-year-old white male noted a cervical mass which was soon followed by generalized lymphadenopathy. The diagnosis was based on lymph node biopsy. The patient responded well to roentgen therapy with a remission for four years. Then a fullness was noted in the left infraclavicular region, associated with moderately enlarged left cervical and axillary nodes. This responded incompletely to roentgen therapy, and subsequently edema developed in the left arm. A year and a half later the infraclavicular mass, as well as a left axillary extension, had become woody hard. At this time it was also noted that the patient had anemia and pronounced proteinuria, which subsequently was found to be associated with cryoglobulinemia and depressed plasma albumin, resulting in massive edema. In roentgen examination of the chest, erosion of the proximal end of the left fourth rib was observed. The patient died seven years after onset with toxemia and massive pleural effusion.

Case 5. A patient with Hodgkin's disease, diagnosed by biopsy, had evidence of involvement of the vertebrae, stomach, intestines, and lungs in addition to cervical and axillary adenopathy. These involvements responded more or less satisfactorily to roentgen therapy. Four years after onset an infraclavicular mass was noted on the left side. It was of a moderately soft consistency and was approximately 5 cm. in diameter. There was also a 1.5 cm. node palpable in the left axilla. The mass responded well to therapy. There were three recurrences, and each time there was good response to roentgen therapy. The patient died two years later, aged 32, of mediastinal obstruction and massive pleural effusion.

Case 6. A patient with Hodgkin's disease, diagnosed elsewhere, was reported to have been successfully treated with roentgen therapy and nitrogen mustard. The patient was 29 years old when first observed by the author three years later. Features of advanced disease with cachexia and generalized lymphadenopathy were noted, but there was no hepatic or splenic enlargement. On roentgen examination an ulcer defect in the stomach was noted. Pleural effusions formed, and repeated tapping was necessary. A smooth, firm infiltration filled out the left infraclavicular fossa, and there was obvious venous obstruction with edema of the left arm and venous collaterals draining downward over the left side of the chest. The patient did not complain of pain directly referable to the presence of this infiltration. He died nearly four years after onset.

DISCUSSION AND CONCLUSIONS

The infraclavicular infiltrating tumor noted in six cases of Hodgkin's disease may prove to be a distinct clinical entity. The fact that the lesion was observed in six cases, only in association with Hodgkin's disease and always on the left side, suggests some unique anatomicopathological determining factor. It is, of course, unsafe to conclude that it can occur only on the left side, or that it cannot occur in association with lymphoblastoma of other types. The number of cases observed is small for statistical analysis, but it does seem that the incidence of such infraclavicular infiltrative localization is greater in Hodgkin's disease than in other lymphoblastomata. In fact, there appears to be less than one chance in ten that it is even one-quarter as frequent in lymphosarcoma as it is in Hodgkin's disease. It never occurred without other areas of involvement, but in four cases it was the only superficial manifestation for a long period in the course of the disease.

It is apparently not the same as the sternal node involvement described by Goldman,[1, 2] for in the 13 cases reported by him the lesion overlay the internal mammary artery, and in some cases it was on the right side, in some on the left. The author has observed two cases in which lesions of this kind occurred.

REFERENCES

1. Goldman, Leonard B.: Hodgkin's disease. An analysis of 212 cases, J.A.M.A., 114:1611, April 1940.

2. Goldman, L. B. and Victor, A. W.: Hodgkin's disease. Salient clinical features and relative value of various methods of treatment based upon study of 319 cases, New York State J. Med., 45:1313, June 1945.

CASE REPORT

◀ Pulmonary Endarteritis Obliterans With Cor Pulmonale Simulating Congenital Heart Disease

Pulmonary Endarteritis Obliterans With Cor Pulmonale Simulating Congenital Heart Disease

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PRIMARY pulmonary vascular endarteritis obliterans in children is exceedingly rare. Necrotizing pulmonary arteritis or so-called periarteritis nodosa occurring with congenital heart disease (Eisenmenger type) has been reported by Old and Russell[4] and Kipkie and Johnson.[3] Both cases occurred in 11-year-old boys. Brill and Krygier[1] reviewed reports of 20 cases of primary pulmonary vascular arteriosclerosis and noted that four of the patients were children 11 to 15 years of age. In these cases intimal proliferation was noted in the pulmonary arterioles, and there was pronounced narrowing or complete occlusion of the lumens, while in the small arterioles were thrombi of various ages and recanalization. In many of the cases complete obliteration and hyalinization of the capillary vessels was noted. There were no pathologic changes in the lungs, but enlargement of the right side of the heart was noted. Brill and Krygier concluded that the condition was the result of either infectious or degenerative change.

Harrison[2] experimentally was able to demonstrate lesions in the pulmonary artery of rabbits given intravenous injections of finely fragmented fibrin clot similar to that described in pulmonary vascular arteriosclerosis as a result of pulmonary emboli. Fibroelastic intimal thickening of the vessels, morphologically indistinguishable from that of spontaneous arteriosclerosis, was observed in the healed lesions. Harrison concluded that in some of the cases reported as primary pulmonary arteriosclerosis because of this histological appearance, the structure might actually have been the result of embolism.

The case to be reported is unique in that the vascular lesions were restricted to the pulmonary arteries. Rheumatic fever as an etiological factor could not be excluded. Shortness of breath, cyanosis, peripheral edema, tachycardia, cough, a harsh systolic murmur in the anterior axillary line, and a palpable systolic thrill suggested the presence of congenital heart disease. At autopsy, pronounced hypertrophy of the right ventricle was noted but there were no malformations.

CASE REPORT

A nine-year-old Mexican female child was admitted to the San Bernardino County Hospital May 29, 1950, with complaints of cough of increasing severity for one week, shortness of breath and fever for one day. There was some nausea and vomiting, and also some pain in the left ear. The patient had been in fairly good health until the present illness. The parents noted that the child had fever and that the breathing was rapid the day before admittance.

The patient appeared to be chronically ill; she was slender and emaciated, the body weight approximately 35 pounds. The temperature was 101.6°, the pulse rate 148 and respiration 40 per minute. There was no discharge from the ears and the ear drums were clear. The pupils were regular, equal and reacted to light and accommodation. The teeth were in poor condition and many were missing. No abnormality was noted in the pharynx. There was an old skin scar on the left side of the neck, and the carotid artery on that side was large and pulsating. Lymph nodes in the neck were not enlarged. The chest was clear to auscultation. The abdomen was scaphoid. No tenderness was noted and there were no palpable masses. The heart rate was rapid and a grade II mitral murmur, heard best at the apex, was noted. The fingernails were curved, but there was no clubbing or cyanosis.

The clinical impression was that the patient had a mild upper respiratory tract infection, congenital or acquired heart disease, possibly rheumatic, avitaminosis, and, possibly, carotid aneurysm.

Erythrocytes numbered 4,900,000 per cu. mm., and the hemoglobin value was 75 per cent (12.9 gm. per 100 cc.). Leukocytes numbered 9,300—79 per cent neutrophils, 19 per cent lymphocytes, and 2 per cent monocytes. Results of urinalysis were within normal limits. In an electrocardiogram, sinus tachycardia and right axis deviation, considered abnormal, were noted. The nonprotein nitrogen content of the blood was 36 mg. per 100 cc.

In roentgen examination of the chest, the lung fields were observed to be clear and the cardiovascular shadow within normal limits. The primary pulmonary vessels at the hila were distended and engorged.

The child had been delivered by cesarean section at eight months in the San Bernardino County Hospital. (The mother had had chronic nephritis associated with toxemia of pregnancy.) The infant weighed 4 pounds 11.5 ounces at birth. There was a swelling on the left side of the neck beneath the mandible and over the left scapula, and on the back of the neck. A week after birth the mass was aspirated and a diagnosis of cystic hygroma was made. In January 1943, the child was a patient at the Children's Hospital in Los Angeles because of suppurative otitis media of the left ear and an abscess below the left ear. Under sulfonamide therapy the ear gradually dried and the abscess became smaller. Subsequently, the hygromic mass was opened and drained and the left carotid artery was ligated. In 1944 the cystic mass was removed and a pathological diagnosis of cystic hygroma was made. The child apparently did well until the present illness. There was no note of a murmur over the heart in the records of the many examinations of the patient.

The day after admittance to hospital, the temperature rose to 103° F. On the third day it was normal and remained normal. The morning after admittance rales heard in the right mid-lung field were considered probably caused by pneumonia. The suspicion of aneurysm of the left carotid artery was not substantiated, and the prominence of the pulsation of the artery was considered due to the absence of the sternocleidomastoid muscle, which had

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been removed. Reaction to a tuberculin test was interpreted as positive, which raised the question of tuberculous pneumonia. After 18 days in the hospital the child was discharged with a diagnosis of primary juvenile tuberculosis. The parents were advised to keep her in bed at home.

The child was readmitted July 27, 1950, because of generalized edema associated with cough. A week before, the left side of the face and then the left leg became swollen. The child had been in bed, propped with pillows because of respiratory embarrassment. There was no pain around the heart, but there had been pain in the left leg for several weeks. The appetite had been poor.

Upon examination the patient was noted to be poorly nourished, very orthopneic and dyspneic. The abdomen was distended and the left side of the face was swollen. Dullness was noted in the apex of the left lung anteriorly. The remainder of the chest was hyperresonant. No rales were heard. The heart seemed to be enlarged to the anterior axillary line. There was a blowing, harsh systolic murmur at the apex, not transmitted, and a thrill was felt over the same area. The liver was palpable down to the umbilicus. There was pitting edema (++) of the legs up to the knees.

Erythrocytes numbered 5,850,000 per cu. mm. and the hemoglobin content was 15.6 gm. per 100 cc. Leukocytes numbered 4,850, with the cell differential within normal limits.

In roentgen examination of the chest (Figure 1) on August 2, 1950, generalized increase in the lung markings, suggesting congestion, was noted. The cardiac shadow was enlarged. In an electrocardiogram taken August 1, there was evidence of sinus tachycardia and right axis deviation.

The patient was given meralluride and digitoxin, ascorbic acid and ammonium chloride. On August 3 the erythrocyte sedimentation rate was 19 mm. in one hour. The child had fever and remained dyspneic. The pulse rate dropped to about 110 per minute. The apex beat was noticed in the third interspace. There was a harsh, blowing systolic murmur, and a diastolic and presystolic component at the apex. The murmur became shrill at the midaxillary line. The lungs, however, were clear.

On August 19 salicylates were given but caused vomiting. Digitoxin and acetylsalicylic acid also had to be discontinued. On August 23, the child became listless and apathetic, and gavage feedings were started. Two days later the heart murmur, harsh and high-pitched, was interpreted as being systolic at the apex, and it was also heard over the pulmonic area. Cyanosis was noted for the first time.

No conclusion could be reached as to whether the abnormalities in the heart were of congenital or rheumatic origin. On August 29 the child became afebrile. Another physician who examined the patient on September 7 made the following report: "Nine years of age, the patient had the body development of a child of five. She was definitely cyanotic. There was no clubbing of the fingers, lobes of the ears or nose. No increase in the number of capillaries in the conjunctiva or eye grounds was noted. The veins of the sublingual and pharyngeal areas were not abnormally engorged. Pronounced venous pulsation in the left side of the neck was dicrotic and not caused by an underlying carotid aneurysm. When the patient lay down, the veins on the right side of the neck filled. The lungs were clear throughout. The heart was definitely enlarged; the point of maximum impulse was in the fourth interspace at the anterior axillary line. In the third left interspace, just at the anterior axillary line, a very definite systolic thrill could be felt. The first and second sounds were well heard at all areas. There was a loud systolic murmur heard best at the third left interspace and transmitted into the axilla. No diastolic murmur was audible at this area. The apex of the heart was in the fifth interspace. Just inside the anterior axillary line, a systolic murmur of an entirely different pitch was audible. This murmur was not transmitted.

Figure 1.—In a roentgenogram of the chest an increase in the size of the heart shadow, and congestion and engorgement of the pulmonary vessels were noted.

The edge of the liver was palpated five fingers' breadth below the costal margin. It was moderately tender.

Definite evidence of right ventricular hypertrophy was noted in an electrocardiogram.

Under the fluoroscope the lung fields were observed to be clear in the periphery. The pulmonary arteries were prominent and pulsated fairly vigorously. The cardiac shadow was considerably enlarged, particularly in the region of the right ventricle. In the left oblique view a very good right ventricular shelf was observed, and it was noted that there was no enlargement of the left ventricle.

"In examination of the blood, slight polycythemia was noted. There was no leukocytosis. The erythrocyte sedimentation rate was 27 mm. in one hour."

The consultant's diagnosis was: (1) congenital heart disease; (2) interatrial septal defect; (3) right ventricular hypertrophy; (4) congestive heart failure confined entirely to right ventricular failure. He commented:

"The fact that the patient was poorly developed was the first consideration which led to the diagnosis of congenital heart disease. Pure right-sided heart failure without evidence of pulmonary disease is usually due to a congenital lesion involving the right side of the heart. The fact that the cyanosis did not come on until the second attack of heart failure was of significance. The systolic murmur and thrill, felt best in the third left interspace at the peristernal line, was strongly suggestive of overloading of the pulmonary circulation as a result of a shunt somewhere within the heart. The faint apical systolic murmur was probably secondary to moderate dilatation. It was possible to definitely rule out coarctation of the aorta, patent ductus arteriosus, transposition of the great vessels, and tetralogy of Fallot, since the lungs were well supplied with blood. A moderate degree of pulmonary stenosis, probably valvular, seemed probable." It was suggested that the patient be kept at rest, that large quantities of distilled water be given in order to prevent thrombosis, and that administration of digitalis be continued until all signs of heart failure had disappeared. The consultant suggested that a cardiac catheterization then be carried out because of the pulmonary stenosis, which he believed could be relieved. He felt that, with the stenosis relieved, the interatrial septal defect should not throw too great a strain on the right heart.

The child continued to be dyspneic, even while at complete rest. There was no edema noted in the genitalia or

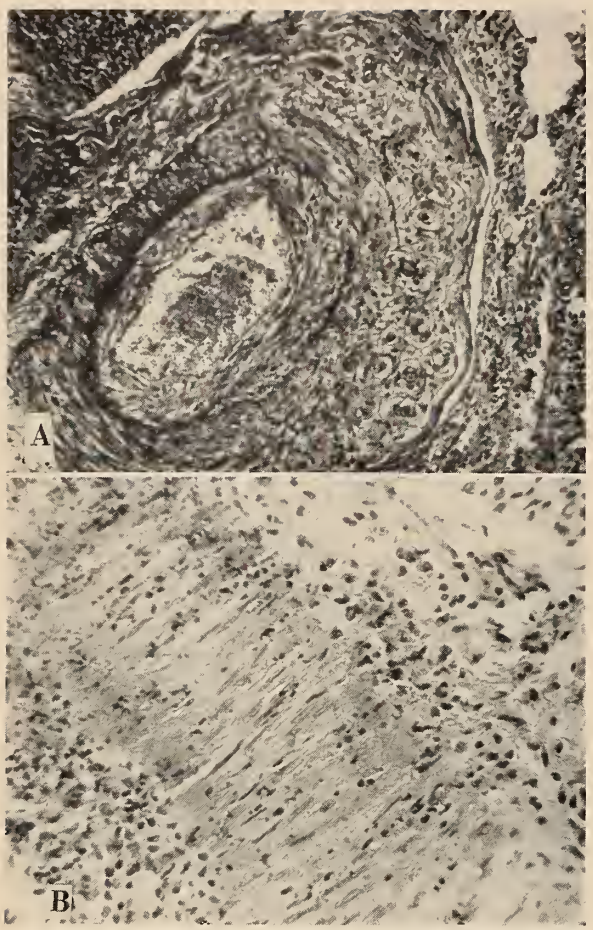

Figure 2.—*A*—A small muscular pulmonary artery. Note subendothelial proliferation, partial destruction of the wall and fragmentation of the elastic fibers. (Weigert's elastic stain). *B*—Higher magnification of the artery. The wall is infiltrated by lymphocytes. (Hematoxylin and eosin stain.)

sacral region or in the extremities. The condition of the patient became poor and she died September 14, 1950, four months after the onset of the acute symptoms.

AUTOPSY REPORT

The body, embalmed, was that of a slenderly built, poorly nourished 9-year-old Mexican female child, 44 inches (112 cm.) in length. There was no free fluid in the abdominal cavity. The lower edge of the liver extended 8 cm. below the xiphoid process. There was no clubbing of the finger tips or toes.

The right pleural cavity contained 500 cc. of a yellow fluid, and the left pleural cavity 400 cc. The pericardial sac was dilated and extended from the right costochondral junction to the left anterior axillary line. It contained about 25 cc. of clear fluid.

The heart weighed 170 grams (normal 110 grams). The large vessels were normal in location. The apex was made up by the right ventricle. The wall of the left ventricle averaged 8 mm. in thickness while the wall of the right ventricle was 10 mm. thick. The tricuspid valve was 85 mm. in circumference. There was pronounced dilation of the right auricle and the right ventricle. Circumference of the aorta was 37 mm., of the pulmonary artery 46 mm. There was an occasional fatty plaque in the intima. The mitral ostium was 42 mm. in circumference. The foramen ovale was closed; there were no evidences of a ductus arteriosus. Both coronary ostia arose from the aorta. The right ostium of the coronary artery was slightly larger than the left. Occasional fatty plaques were noted in the intima of the aorta. The myocardium was moderately firm and deep brown.

The right lung weighed 150 grams. The upper lobe appeared smaller than the middle and lower lobes. All the lobes felt firm. The pleura was smooth and glistening. When sectioned the parenchyma of the lung was observed to be dark purple and slightly moist with blood. The bronchi were everywhere free. The branches of the pulmonary artery appeared dilated, and the intima contained an occasional fatty plaque. The lumen was free. The left lung weighed 140 grams. The edges were crepitant and there were no remarkable abnormalities noted.

The liver weighed 620 grams. It was firm and the surface smooth. The sectioned surface of the parenchyma was dark reddish-brown with distinct acinar markings. The spleen, which weighed 80 grams, was firm and the pulp on sectioned surface was deep purple-red and moist. The follicles were distinct.

About equal in size, the kidneys together weighed 130 grams. The capsules were stripped with ease, leaving a smooth purple-tan surface. The average diameter of the sectioned surface of the cortex was 6 mm. The markings were distinct.

The brain was not examined. No abnormalities were noted in other organs.

Microscopic Examination

Heart: The muscle fibres of the left ventricle appeared narrow and the nuclei were distinct. In the epicardium there were occasional foci of lymphocytes. No abnormality was noted in the branches of the coronary artery and vein. Muscle fibers of the right ventricle were about four times the diameter of those in the left ventricle and many of the nuclei were large. There was loose infiltration of large mononuclear and polymorphonuclear cells into the epicardium and for a short distance into the myocardium. No Aschoff nodules were observed.

Pulmonary artery: In sections taken from the main artery and also from its branches, pronounced thickening of the wall was noted. Many of the endothelial cells were swollen and the intima was thickened and infiltrated with lymphocytes and large mononuclear cells. There was an occasional focus of fibrinoid necrosis in the intima. In a few places in the adventitia infiltrations of lymphocytes were noted.

Lungs: In sections taken from numerous areas, collapsed alveoli and dilated capillaries engorged with red cells were observed. Many of the bronchi were dilated, many were occluded by mucous and desquamated epithelial cells, many were surrounded by polymorphonuclear leukocytes, plasma cells and lymphocytes. In examination of the branches of the pulmonary artery, obliteration of the lumen by an active fibroblastic tissue rich in young capillaries was noted in many places. Fibrinoid necrosis of the walls of some of these capillaries was noted; in many such instances only a narrow slit of lumen remained. There was thickening of the walls, particularly the intima and media, of many of the arterioles; the elastic tissue appeared increased and thickened, particularly the external limiting membranes. In some of the arterioles the lumen was completely obliterated by the subendothelial fibrous proliferation (Figure 3) while in other muscular arteries there was obliteration and recanalization of the lumen (Figure 4). Some of the arterioles contained thrombi. In some of the arterioles the endothelial cells were proliferated and swollen and appeared to be hydropic. Only rarely observed in the arterioles was a suggestion of nodular thickening of the wall. In some of the branches in which proliferation of cells, particularly lymphocytes and monocytes, was noted, polymorphonuclear leukocytes were inconspicuous.

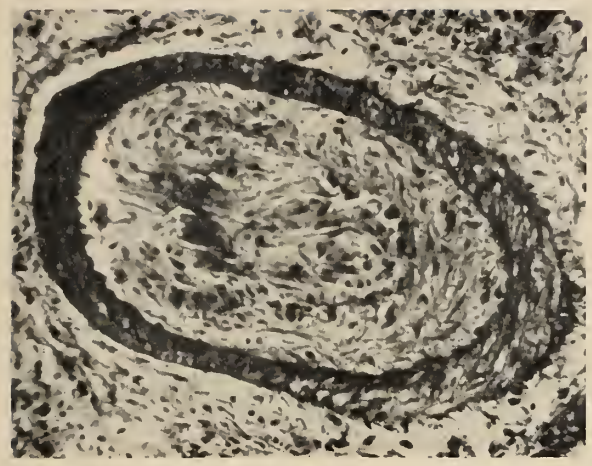

Figure 3. — Subendothelial fibrous proliferation completely obliterating the lumen of a small muscular pulmonary artery. (Weigert's elastic stain.)

One vessel was infiltrated with polymorphonuclear cells and lymphocytes rather typical of periarteritis nodosa. In some of the vessels the changes were much like those observed in the healing stage of periarteritis nodosa.

DISCUSSION

In the case here reported, the lesions were restricted to the pulmonary arterioles. A variety of pathologic changes were noted. Pronounced endothelial proliferation was noted in the earliest lesion. Many of the cells were hallooned with a vacuolated cytoplasm. These changes were followed by subendothelial fibrous proliferation. In some of the arterioles there was lymphocytic infiltration throughout the media and adventitia, while the majority of the smaller vessels were thickened, chiefly by subendothelial fibrosis, to such an extent that the lumen was narrowed or completely obliterated. Recanalization of the lumen was noted in some of the obliterated arterioles.

The media of the main pulmonary artery appeared to be vacuolated and there were cystic areas. In the main branches, focal thickening of the intima was frequently noted.

The sclerosis of the pulmonary arteries and the pulmonary arterioles was responsible for the pronounced pulmonary hypertension which in turn caused the hypertrophy of the right ventricle.

The short duration of the symptoms and the periodic fever would suggest an infectious process such as that of rheumatic fever, but in the postmortem examination of the heart nothing to support a diagnosis of rheumatic fever was noted. Although thrombi and nodular thickening typical of the healed stages of periarteritis nodosa were noted, these changes were not conspicuous.

SUMMARY

A case in which a nine-year-old Mexican female had pathologic changes restricted to the pulmonary arteries is reported. Pronounced cor pulmonale suggested long-standing pulmonary hypertension. The main changes confined to the arterioles consisted of endothelial proliferation, focal fibrinoid necrosis of the intima, arteritis, subendothelial fibrosis with narrowing and occlusion of the lumen, and recanalization of the obliterated lumen.

Clinical observations suggested congenital heart disease, interatrial septal defect and right ventricular heart failure.

The short duration of the illness suggested an infectious process. However, many of the changes in the arterioles were degenerative in nature and simulated those of arteriosclerosis.

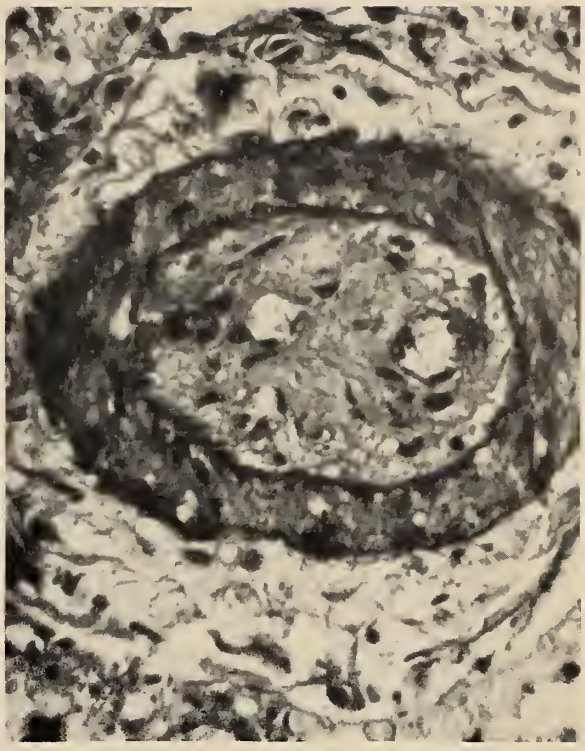

Figure 4. — A small muscular pulmonary artery with obliteration and recanalization of the lumen due to subendothelial fibrous proliferation. (Weigert's stain.)

1340 Elizabeth Street.

REFERENCES

1. Brill, I. C., and Krygier, J. J.: Primary pulmonary vascular arteriosclerosis, Arch. Int. Med., 68:560-577, Sept. 1941.

2. Harrison, C. V.: Experimental pulmonary arteriosclerosis, Jr. Path. and Bact., 60:289-293, April 1948.

3. Kipke, G. F., and Johnson, D. S.: Human periarteritis nodosa, A. M. A. Arch. Path., 51:387-392, April 1951.

4. Old, J. W., and Russell, W. O.: Necrotizing pulmonary arteritis occurring with congenital heart disease (Eisenmenger complex), Amer. Jr. Path., 26:789-805, September 1950.

California MEDICINE

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EDITORIALS

C.M.A. and A.M.A. Meetings

Los Angeles, host early last month to meetings of both the California Medical Association and the American Medical Association, proved, as usual, the city's ability to handle large professional groups in splendid fashion.

The C.M.A. meeting, immediately preceding the national gathering, was the first Interim Session of the House of Delegates under the new Constitution and By-Laws. It produced about ten items of new business and gave the House of Delegates a chance to receive proposals which may be mulled and, after calm consideration, voted upon at the next meeting of the House.

Under the Association's new basic operating documents, all new business except proposed amendments to the Constitution is to lie on the table until the next succeeding meeting of the House of Delegates, unless the proposal is entered as an emergency measure and so voted by the House of Delegates. This system has proved its practicability at the December session, where a few items were voted as emergencies and acted upon without delay. Other proposals, not labeled or considered in the emergency category, were referred to the proper reference committee for study and report back to the meeting of the House next April.

Members of the House of Delegates, and all members of the Association, will thus be given a chance to pass on their own comments on proposed measures prior to the next meeting. The reference committees propose to invite comments and suggestions from all interested members and to base their conclusions and recommendations upon the responses.

Reports of these committees will be furnished members of the House of Delegates well in advance of the next meeting, so that the county medical society delegates may discuss all items with their constituents and be prepared to discuss and vote upon all measures when the House next meets.

The full text of all proposals placed before the December meeting will be published in the transcript of the House of Delegates in an early issue of California Medicine. In the current issue will be found the language of several proposed amendments to the Constitution which were introduced at the 1951 Annual Session, to lie on the table for one year. These proposals have likewise been referred to a reference committee and will be subject to report and action at next April's meeting.

As the C.M.A. finished its first Interim Session, the A.M.A. began its fifth meeting of this character. From all reports, especially those of some of the top A.M.A. officials, it appears that the Los Angeles meeting was the best Interim Session to date. It produced a scientific program which has drawn high praise, an exhibit of vast proportions and range, a highly orderly and businesslike session of the House of Delegates and a nonpartisan political program which was nationally broadcast and locally televised.

The political gathering brought together Senator Robert A. Taft of Ohio and Senator Harry F. Byrd of Virginia, both of whom discussed before an audience of more than 7,000 the outlook for the nation in the coming year. While the audience may have expected a controversial discussion between a leading Republican candidate for the presidency and an outspoken Democrat leader, the applause indicated the unanimity of opinion expressed by the two Senators in condemnation of excessive governmental spending and governmental controls. These two outstanding exponents of their parties' policies may well have laid the groundwork for the political struggle of next fall.

Los Angeles may not soon again have the chance to entertain these two functions in the same week but on the basis of its performance last month it is amply capable of doing a magnificent job when and if called upon.

C.P.S. Study Committee

One of the knotty problems brought before the first Interim Session of the C.M.A. House of Delegates last month was the question of how far and in which directions the C.P.S. Study Committee was to go. This special committee, which was set up by action of the 1951 House of Delegates, rendered a preliminary report to the interim session, suggested ways and means of continuing its activities, and requested that funds be made available to carry on economic and actuarial studies upon which to base recommendations for the future of C.P.S.

The House of Delegates approved the preliminary report, including the committee's recommendations, and also approved the proposed appropriation by the Council of up to $40,000 for the studies contemplated.

Objectives of the research to be undertaken will be to study how C.P.S. can be of further service to the people in meeting the growing demand for medical care coverage in employer-employee contracts, in providing for the needs of the agricultural population, and in extension of catastrophe coverage for groups and for persons who are not members of an organization. The studies are expected to cover, in addition, other medical care plans now available to the people of California.

Only with public and professional acceptance can C.P.S. hope to perform a public service. Now that the preliminaries of this important subject have been determined and approved, now that the committee is assured of funds to carry out its projected research, there is every indication that the studies will produce the findings upon which such mutual acceptance may be based.

Letters to the Editor . . .

EDITOR,
CALIFORNIA MEDICINE:

To keep the historical record correct, herewith a memorandum referring to a misstatement — "Los Angeles, honored for the first time by an A.M.A. meeting"—that appeared in an editorial in the November issue of CALIFORNIA MEDICINE.

In year 1911, Los Angeles County Medical Association was host to the 62nd Annual Session of the American Medical Association. The undersigned was secretary of the executive committee that had charge of the arrangements. He compiled a 60-page "Information Booklet." A copy is on file in the Los Angeles County Medical Association library.

California State Journal of Medicine and the *Southern California Practitioner* of year 1911 printed many editorial and other references to the American Medical Association session of 1911, held in Los Angeles. Other references appear in *Journal of the American Medical Association* and the *Bulletin of the Los Angeles County Medical Association.*

The *Bulletin of the Los Angeles County Medical Association* in its issue of March 11, 1912, stated that the balance of the subscription fund for entertainment ($8,857.89) had been turned over to the permanent quarters fund of the Los Angeles County Medical Association. (This balance was made possible by a donation of some $5,000 by the Busch family of Pasadena, for an afternoon entertainment in their sunken gardens off Orange Grove Avenue and by the donation of the Los Angeles Chamber of Commerce in providing transportation to Catalina Island.)

Since year 1911, Los Angeles County Medical Association has added hundreds of names of physicians to its membership roster. It is only proper that on matters historical having to do with medical organization, they be not misinformed.

GEORGE H. KRESS, M.D.

CALIFORNIA MEDICAL ASSOCIATION

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NOTICES AND REPORTS

Proposed Constitutional Amendments

Following are the proposed amendments to the Constitution of the California Medical Association that were introduced at the 1951 Annual Session. All have been referred to Reference Committee No. 3, which is to make its report upon them available to Delegates at least 30 days before the opening of the 1952 Annual Session in Los Angeles, April 27. California Medical Association members who wish to record opinions on any of the proposed amendments may send them to the chairman of Reference Committee No. 3—Lyle Craig, M.D., 65 North Madison Avenue, Pasadena.

Submitted by Donald Carson, San Francisco:

Resolved, That subparagraph (c) of Section 9, Part B, of Article III of the Constitution be amended to read as follows:

(c) The President, President-Elect, Speaker and Vice-Speaker.

* * *

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article III, Part A, Section 1 of the Constitution be amended to read as follows:

The House of Delegates shall consist of

(a) Delegates elected by the members of component societies as provided in the By-Laws;

(b) Officers of the Association, as designated in Article VI, Section 1 of this Constitution. Excepting the Secretary-Treasurer and the Editor, they shall have the right to vote.

Anything in the Constitution and By-Laws which is in conflict with the foregoing is hereby repealed.

* * *

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article III, Part B, Section 11* of the Constitution be amended to read as follows:

(a) District Councilors shall be elected by vote of the delegates from each district in the manner and at the time specified in the By-Laws.

Paragraph (b) is hereby repealed, except that the present Councilors-at-Large shall complete their terms.

Anything in the Constitution and By-Laws in conflict with the foregoing is hereby repealed.

* * *

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article III, Part B, Section 9 of the Constitution shall be amended to read as follows:

The Council shall consist of:

(a) Eleven District Councilors elected from the Councilor districts specified in this Constitution.

(b) The President, President-Elect and Speaker. In addition the Secretary-Treasurer and Editor, but without the right to vote.

Anything in the Constitution and By-Laws which is in conflict with the foregoing is hereby repealed.

* * *

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article IV, Section 5 of the Constitution be amended to read as follows:

At each regular session of the House of Delegates, the Council shall submit to it an itemized budget stating the proposed expenditures of the Association for the ensuing year. The budget may be altered or revised by the House of Delegates, but must be adopted by the House before adjournment of the session. After its adoption, no expenditures in excess of the amount of the budget item covering the subject of such expenditures may be made in the year covered by the budget by the Association or any of its officers, agents or employees, unless the Council by a three-fourths vote of all voting members shall first approve such excess expenditure by resolution duly adopted, and further provided that in no instance may the Council expend funds in any fiscal year in excess of 25 per cent more than the total amount of the budget without permission of the House of Delegates. Recurring items in the budget (fixed expenditures covering more than one year) shall, when first adopted, be binding as to the subsequent budgets to the extent of commitments or obligations entered into by the Association within authority granted by the House of Delegates or this Constitution or the By-Laws.

*Due to a typographical error, this amendment was introduced as applying to Article III, Part B, Section 9, whereas it is obvious that the author intended it to apply to Section 11.

Correction, Please!

In the September 1951 issue of CALIFORNIA MEDICINE, page 241, a typographical error in the new By-Laws of the California Medical Association makes it appear that representation of the county societies in the C.M.A. House of Delegates may be considered on a different basis from that actually adopted by the 1951 House of Delegates.

Chapter V, Section 2 of the By-Laws, which was incorrectly printed, should read as follows:

"Commencing with the 1952 regular session of the House of Delegates, each component society shall be entitled to one delegate for each fifty (50) active members or major fraction thereof, according to its membership as of the first day of November of the preceding year; provided, however, that each component society shall be entitled to a minimum of two delegates."

In Memoriam

BALDWIN, BYRON L. Died in an airplane accident near Redmond, Oregon, November 3, 1951, aged 54. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1925. Licensed in California in 1925. Doctor Baldwin was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

BANKS, HARRY B. Died in San Francisco, October 29, 1951, aged 54, of carcinoma. Graduate of the University of California Medical School, Berkeley-San Francisco, 1935. Licensed in California in 1935. Doctor Banks was a member of the San Francisco Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

BROWN, HUGH L. Died in an airplane accident near Redmond, Oregon, November 3, 1951, aged 47. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1929. Licensed in California in 1929. Doctor Brown was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

BULSON, CHARLES H. Died in Napa, November 20, 1951, aged 83. Graduate of Gross Medical College, Denver, 1889. Licensed in California in 1889. Doctor Bulson was a member of the Napa County Medical Society, a life member of the California Medical Association, and a Fellow of the American Medical Association.

✤

BURKETT, RICHARD C. Died in Napa, November 3, 1951, aged 56, of metastatic carcinoma of the liver. Graduate of the University of Illinois College of Medicine, Chicago, 1922. Licensed in California in 1922. Doctor Burkett was a member of the Napa County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

FRIEDLANDER, RICHARD D. Died in San Francisco, November 1, 1951, aged 45. Graduate of the University of California Medical School, Berkeley-San Francisco, 1930. Licensed in California in 1930. Doctor Friedlander was a member of the San Francisco Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

GAGE, CLIFTON E. Died in Los Angeles, October 27, 1951, aged 68, of gastrointestinal hemorrhage. Graduate of the College of Physicians and Surgeons, Los Angeles, 1910. Licensed in California in 1910. Doctor Gage was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

HADDEN, DAVID. Died in Berkeley, November 17, 1951, aged 76, of coronary thrombosis. Graduate of the Cooper Medical College, San Francisco, 1899. Licensed in California in 1899. Doctor Hadden was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

✤

JELTE, SAFFORD A. Died in Oakland, November 17, 1951, aged 59, of acute coronary occlusion. Graduate of the University of Arkansas School of Medicine, Little Rock, 1919. Licensed in California in 1919. Doctor Jelte was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

MAYERS, HOWARD D. Died in an automobile accident near San Jose, November 2, 1951, aged 50. Graduate of Northwestern University Medical School, Chicago, 1934. Licensed in California in 1936. Doctor Mayers was a member of the Shasta County Medical Society, the California Medical Association, and the American Medical Association.

✤

MYERS, AUMOND D. Died in an airplane accident near Redmond, Oregon, November 3, 1951, aged 44. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1935. Licensed in California in 1935. Doctor Myers was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

NEGLEY, JAMES C. Died in Glendale, October 23, 1951, aged 68, of coronary artery occlusion. Graduate of the University of Michigan Medical School, Ann Arbor, 1910. Licensed in California in 1911. Doctor Negley was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

WALKER, JOHN R. Died in Carmel, November 16, 1951, aged 75, of aortic stenosis. Graduate of Barnes Medical College, St. Louis, Missouri, 1898. Licensed in California in 1901. Doctor Walker was a retired member of the Fresno County Medical Society, the California Medical Association, and an Associate Fellow of the American Medical Association.

Questions and Answers about C. P. S.

Question: While the new Physician Manual proves helpful in billing for services rendered to C.P.S. patients, it has the appearance of being quite expensive. Does C.P.S. have to spend so much money in getting this information to doctors?

Answer: When 12,000 manuals are produced at once, as in this case, the printing cost for each is quite low. Several bid prices were received from printers and the lowest bid, which was accepted, amounted to only about 30 cents per copy—definitely a reasonable price when the following points are considered: The manual is not only attractive but durable and serviceable; its loose-leaf binding permits insertion of new pages when necessary; it lies flat when opened, permitting easier use; sections are tabbed for quicker reference.

In addition, the Manual will pay for itself by reducing the number of letters between physician members and C.P.S. In the relatively short time since the manual was distributed to doctors' offices, C.P.S. has noticed an appreciable decrease in the number of claim rejections and an even greater decrease in correspondence relative to claims. Surveys show that, including all cost factors, the expense of writing letters ranges from a minimum of 30 cents to as high as $1. Each time the information provided in the Manual eliminates correspondence between physician members and C.P.S. it is helping to pay for itself.

Question: Who sets the C.P.S. income ceiling?

Answer: The C.P.S. income ceiling is set by the C.P.S. House of Delegates, which is also the C.M.A. House of Delegates.

At the last annual meeting of the House of Delegates, two resolutions regarding the income ceiling were proposed. One proposed that the ceiling be raised from $3,600 to $4,800. The other proposed that the ceiling be maintained at $3,600. The Resolutions Committee, to which these proposals were referred, then recommended a substitute resolution, as follows: That the ceiling for single persons without dependents be maintained at $3,600 and that the ceiling for family persons be increased from $3,600 to $4,200. This substitute resolution was passed by the House of Delegates.

Question: What is the intended use of the new green envelopes, marked for the attention of the C.P.S. Medical Director, which have been sent to physician members?

Answer: While this question was answered in the November issue, the continued misuse of the green envelopes warrants a repeated explanation.

The green envelopes were supplied to physician members to speed the handling of claims *on complicated or unusual procedures.* A saving of time and special medical consideration is effected by having these claims sent directly to the Medical Director—instead of having them routed through the normal processing channels as is done with routine claims.

Experience since their introduction, however, shows that the use of the green envelopes is being misunderstood. Instead of restricting their use to complicated or unusual cases, many physicians are using them for routine bills—thereby retarding consideration of claims which really merit special attention by the Medical Director.

An additional point: When a claim is sent in the green envelope, it should be accompanied by a short report from the physician, describing the particular problem involved in the case.

Question: Under the *new* two-visit-deductible medical contract, are maternity services on an indemnity basis?

Answer: Yes. According to the wording of the contract, C.P.S. provides "an allowance of $50 to be applied towards the total cost of all professional prenatal, postnatal and obstetrical services in cases of pregnancy or childbirth" for female employee members who have held the contract for at least nine successive months prior to delivery. As a result, the income ceiling does not apply for professional services in maternity cases. The physician may bill the patient directly for the difference between the C.P.S. allowance and his private fee.

Question: Is there a difference between the individual family plan and the direct payment program?

Answer: Yes. The individual family plan is for persons who wish to join C.P.S. but who are not qualified for group enrollment because they are not employed in a group of five or more persons. The direct payment program is for persons who originally were enrolled in a group and who wish to retain C.P.S. membership after they have left the group.

C.P.S. Payments to Physicians

C.P.S. physician members now are receiving payments at 100 per cent of the existing (1949) Fee Schedule for services rendered to C.P.S. patients.

Announcement of the action, effective for services rendered on and after December 1, 1951, was made at the recent interim meeting of the House of Delegates by Dr. Donald Cass, president of the C.P.S. Board of Trustees.

Letters notifying each physician member were immediately dispatched.

Payment of 100 per cent fees was foreshadowed by the introduction of new C.P.S. contracts for beneficiary members in the autumn of 1950. The new contracts, adjusting both rates and benefits, gradually replaced the then existing contracts. Even before contract conversion was completed, the relationship of the new contracts to fee payments was shown last June 1 when fees were raised from 80 to 90 per cent. Now, with conversion largely completed, C.P.S. is able to boost payments to the full amounts listed in the Fee Schedule.

In announcing the action, Dr. Cass paid tribute to the medical profession's "unselfish support of C.P.S." through the years in accepting less-than-normal fees so that the plan, which commenced as a pioneering organization in the field of prepaid health, could gain strength and experience and lay a solid foundation for the future.

The C.P.S. administration, in accordance with a resolution adopted at the last annual meeting of the C.P.S. House of Delegates, is taking steps to have representatives appear at hospital staff meetings to give physicians up-to-date reviews of C.P.S. activities and plans. All hospitals have been requested to inform C.P.S. of regular staff meeting dates, and some meetings now are being programmed.

Members of the C.P.S. House of Delegates, their alternates and secretaries of county medical societies are now receiving bimonthly reports from the C.P.S. administration. Summarizing important C.P.S. developments, including actions of the C.P.S. Board of Trustees, the reports will be a source of information about C.P.S. not only for the delegates and alternates, but also for the physicians they represent.

NEWS and NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

Establishment of a **Pacific Tropic Diseases Research Project** with headquarters in the department of infectious diseases at the University of California at Los Angeles School of Medicine was announced recently by Dr. Stafford L. Warren, dean of the medical school.

The project will be directed by Dr. John F. Kessel, professor of infectious diseases and head of the division of parasitology and tropic diseases, U. C. L. A. School of Medicine.

* * *

The Los Angeles Obstetrical and Gynecological Society has announced a special two-day program to be presented February 8 and 9 by a group of nationally known authorities in obstetrics and gynecology. The sessions, which are to be held at the Elks Club, Sixth and Park View, are to open at 9:30 a.m. Reservations must be made not later than February 1. The fee is $15.

* * *

Announcement of the election of Dr. Wilbur Bailey as president and trustee and of Dr. Eric A. Royston as vice-president was made last month by the Los Angeles County Medical Association. They succeed Dr. Richard O. Bullis and Dr. Warren A. Wilson, respectively. Dr. Paul D. Foster was reelected secretary-treasurer and trustee. In addition, Drs. Lyle G. Craig, Warren A. Wilson and Harold R. Witherbee were elected trustees.

SAN DIEGO

Election of Dr. Ralph M. King as president-elect of the San Diego County Medical Society was announced at the November meeting of the organization. Dr. Howard A. Ball was elected treasurer and Dr. W. H. Geistweit, Jr., secretary. Delegates to the California Medical Association are Drs. Douglass H. Batten and Roger C. Isenhour.

SAN FRANCISCO

Dr. Edmund J. Morrissey was named president-elect of the San Francisco Medical Society at its meeting in December. He will take office January 1, 1953, succeeding Dr. Stacy R. Mettier, this year's president. Dr. Roberta F. Fenlon was elected vice-president, Dr. Donald McLean Campbell, secretary-treasurer, and Dr. Herbert C. Moffitt, assistant secretary-treasurer. Elected directors were Dr. Garnett Cheney, retiring president; and Drs. Harold Hand, August Spitalny, Bert L. Halter, Henry Gibbons III, Russell R. Klein and Gerald Gill.

SONOMA

The second annual session of the North Coast Counties **Regional Medical and Surgical Institute** will be held in Santa Rosa, Thursday and Friday, February 14 and 15, 1952, at the high school auditorium. Local arrangements are under the direction of Dr. Horace F. Sharrocks and his committee for postgraduate study, Doctors Leonard W. Hines, William J. Rudee, J. Leslie Spear, R. Dee Robbins, Clifford M. Carlson and A. Morse Bowles, who heads the regional postgraduate study committee, representing the counties of Del Norte, Humboldt, Mendocino, Lake, Napa, Solano, Sonoma, Marin and parts of Contra Costa. The teaching program has been arranged by this committee in conference with Stanford University School of Medicine, Medical Extension.

Program

THURSDAY, FEBRUARY 14, 1952

Chairman, Horace F. Sharrocks, M.D., Sebastopol

8:30- 9:30 a.m.—Registration: Santa Rosa high school auditorium.

9:30-10:30 a.m.—What's New in Medicine, Dwight L. Wilbur, M.D.

10:30-11:30 a.m.—Treatment of Tendon and Nerve Injuries, L. D. Howard Jr., M.D.

11:40-12:30 p.m.—Blood Grouping Including the Rh Problem, William P. Creger, M.D.

12:30- 2:00 p.m.—Luncheon and Round Table Discussion—Chairman, Leonard Hines, M.D., Santa Rosa.

Afternoon Session

Chairman, Wayne P. McKee, M.D., Ferndale

2:00- 3:00 p.m.—Treatment of Burns, L. D. Howard Jr., M.D.

3:10- 4:00 p.m.—Transfusion Reactions, William P. Creger, M.D.

4:10- 5:00 p.m.—Medical Treatment of Peptic Ulcers, Dwight L. Wilbur, M.D.

6:30 p.m.—Dinner Meeting, Sonoma Mission Inn—Toastmaster, Leonard W. Hines, M.D.

Speaker, Hale F. Shirley, M.D.: Behavior Problems in Children.

FRIDAY, FEBRUARY 15, 1952

Morning Session

Chairman, Herbert B. Messinger, M.D., Napa

9:00-10:00 a.m.—What's New in Surgery, Frank Gerbode, M.D.

10:00-11:00 a.m.—Radiation Injuries in Peace and War, William Saunders, M.D., U.S. Veterans Hospital, San Francisco.

11:10-12:00 noon—Common Mistakes in the Treatment of Common Fractures, Donald E. King, M.D.

12:00- 1:45 p.m.—Luncheon and Round Table Discussion—Chairman, Leonard Hines, M.D.

2:00- 3:00 p.m.—Surgical Treatment of Wounds of the Chest, Frank Gerbode, M.D.

3:10- 4:00 p.m.—Orthopedic Problems in the Growing Child, Donald E. King, M.D.

The wives of the doctors attending are being invited to hear the scientific sessions if they wish. The Auxiliary is also planning other events of interest for them.

* * *

Dr. Carl Anderson of Santa Rosa was elected president-elect of the Sonoma County Medical Society at the December meeting, and Dr. Leonard Hines, also of Santa Rosa, was installed as president, succeeding Dr. Horace Shar-

POSTGRADUATE EDUCATION NOTICES

STANFORD UNIVERSITY SCHOOL OF MEDICINE

1952 Postgraduate Course in Ophthalmic Pathology:

MONDAY, FEBRUARY 11:
Afternoon: Normal histology, growth and aging.
Evening: Embryology and developmental anomalies.

TUESDAY, FEBRUARY 12:
Afternoon: Inflammation, injuries and wound healing.
Evening: Surgical pathology and external diseases.

WEDNESDAY, FEBRUARY 13:
Afternoon: Uveitis.
Evening: Cataract.

THURSDAY, FEBRUARY 14:
Afternoon: Glaucoma.
Evening: Vascular lesions and retinopathies.

FRIDAY, FEBRUARY 15:
Afternoon: Tumors (extraocular).
Evening: Tumors (intraocular).

Fee: $50 except for residents in training. Group limited to 20 students. For application and information address inquiries to Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, Calif.

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE: UNIVERSITY EXTENSION

Symposia on Diseases of the Chest:

Presented through the cooperation of the American College of Chest Physicians and Stanford University, at the request of the California Chapter of the American Academy of General Practice. (Credit approved for 25 hours of instruction.)

JANUARY 16, 23, 30, and FEBRUARY 6, 1952: Wednesday afternoon and evening.

University of California Extension Building, 540 Powell Street, San Francisco. (Place of Dinner and Evening Session to be announced.)

Fee: $25.00.

Postgraduate Courses for Practicing Physicians:

Clinical Endocrinology and Metabolic Diseases, including the non-endocrine application of endocrine substances.

JANUARY 28 through FEBRUARY 1, Toland Hall, University of California Hospital.

Microscopy and Photomicrography: Part 1. The Critical Use of the Microscope.

JANUARY 17 through MARCH 20, Thursday evenings, Laboratory at Medical Center.

Fees appear in detailed programs.

Address inquiries for application and information to Stacy R. Mettier, M.D., Head of Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22, Calif.

rocks of Sebastopol. Dr. Frank Lones, Santa Rosa, was elected secretary-treasurer to succeed Dr. William J. Rudee who had served in that office for three years. Dr. Rudee, Dr. Carroll B. Andrews of Sonoma, and Dr. John J. Mohrman of Petaluma were elected to the executive committee.

GENERAL

Dr. Max Sadove, head of the department of anesthesiology at the University of Illinois, was elected organizing president of the **Walter Reed Society** and Dr. Clinton H. Thienes, head of the department of pharmacology and toxicology, University of Southern California, was elected a vice-president at the first official meeting of the group held in Los Angeles at the close of the American Medical Association meetings. The society, which is sponsored by the National Society for Medical Research, is composed of persons who have served as "human guinea pigs" in medical research or experimentation under the direction of a qualified scientist.

* * *

Dr. Elmer M. Bingham, health officer for the San Joaquin Local Health District, was elected president of the **California Conference of Local Health Officers** at the conference's fifth annual meeting held in Stockton November 14 to 17. Dr. Bingham succeeds Dr. J. B. Askew, director of the San Diego Health Department.

Serving with Dr. Bingham during the coming year will be Dr. Roy O. Gilbert, Los Angeles County health officer, vice-president, and Dr. James C. Malcolm, Alameda County health officer.

* * *

The policy for **distribution of yellow fever vaccine** from the Rocky Mountain Laboratory of the Public Health Service, which is the only laboratory in this country on the World Health Organization's list of institutions producing approved vaccine, was stated recently by the U.S.P.H.S. Because the vaccine is highly thermolabile and must be stored and transported at a subfreezing temperature, strict control of its handling is required.

1. Shipments of the vaccine are to originate from the Rocky Mountain Laboratory and be routed directly to the user except as provided in 3 below. The vaccine is not to be redistributed.

2. The vaccine will be distributed in the United States to:
   Public Health Service facilities.
   Department of Defense installations.
   Organizations with large numbers of employees going into yellow fever areas.
   One health department of state in which a yellow fever clinic of the Public Health Service is not available.

The Epidemiology and Immunization Branch of the Division of Foreign Quarantine is responsible for approving facilities for the receipt of the vaccine, and will conduct necessary investigation to insure compliance with requirements for handling the vaccine.

3. The vaccine may be sold to private concerns, or their agents, to be sent abroad for inoculation of employees in yellow fever areas. It may also be sold to approved foreign governments. Inasmuch as the vaccine is on the restricted commodity list of the Office of International Trade, Department of Commerce, all sales (except sales to Canada and countries of Central and South America) for the purpose of exportation must be approved by that agency. Orders not meeting the requirements of the Office of International Trade will be referred to the administrative officer of the Microbiological Institute.

BOOK REVIEWS

LOW SODIUM DIET—A Manual for the Patient. By Thurman B. Rice, A.M., M.D., Professor of Public Health, Indiana University School of Medicine. Lea & Febiger, Philadelphia, 1951. 103 pages. $2.75.

This book, written by a physician who himself is on a low sodium diet, is an interesting, but superficial discussion of the subject. There are a number of errors which have crept into the book. A few of these may be listed:

Halibut and salmon are listed as high in sodium. These are relatively low (50 mg. sodium per 100 gm.) as compared to sardine and tuna.

On page 21 the author states that "celery, etc., is good," but celery is high in sodium.

On page 26 ice cream is recommended for dessert, but this can be very high in sodium.

On page 50 sherbet is advocated, but even though made with skimmed milk, can be high in sodium.

On page 59 it should be made clear that tomato juice, which is listed under "low sodium" column, should not be canned unless salt-free.

On page 70 there is very little relationship between the fruits and vegetables grouped on the bottom of the page; this is also true of the charts on pages 59-60. For example, one cup of parsnips and squash are allowed, yet on page 60 squash is listed as "very low" and parsnips as "medium."

The tables which give the sodium content per 100 grams food are not as helpful to the patient as if the sodium content per average serving was given. There is a good deal of repetition in the book, but the philosophy is worthwhile, as well as the discussion of sodium in water.

In general, although considerable interesting data are presented, this book does not contribute much more than careful use of the Mead Johnson tables or study of the "Practical Aspects of the Low Sodium Diet," published by the San Francisco Heart Association.

* * *

DISEASE IN INFANCY AND CHILDHOOD. By Richard W. B. Ellis, O.B.E., M.A., M.D., F.R.C.P., Professor of Child Life and Health, University of Edinburgh. The Williams and Wilkins Company, Baltimore, 1951. 695 pages.

Dr. Ellis' intention, stated in his preface, is "primarily to emphasize those features of the young and growing individual which will determine his response to the impact of disease processes, and distinguish this response from the behavior of the adult . . ." This volume may not fulfill this intent for the average reader. The author further states "this book is not intended as an inclusive work of reference, but rather as an introduction to clinical paediatrics for those who are already familiar with the natural history of disease processes in adult life." "Disease in Infancy and Childhood" is satisfactory for this purpose. The author's economical style makes for easy reading but leads to omissions where the physician less experienced in pediatrics most needs details. Although this book may be read with profit and enjoyment, the busy practitioner will not find it the most useful of currently available works on pediatrics.

* * *

CLINICAL HEART DISEASE. By Samuel A. Levine, M.D., F.A.C.P., Clinical Professor of Medicine, Harvard Medical School; Physician, Peter Bent Brigham Hospital, Boston. Fourth Edition, illustrated. W. B. Saunders Company, Philadelphia, 1951. 556 pages. $7.75.

Levine's new edition brings up to date his well-known text book first published in 1936. The new edition follows the old ones in organization, style and in the intense personal approach to cardiology. The readable style, the illustration with apt clinical examples and sound clinical judgment all combine to make this volume exceedingly valuable to all physicians interested in heart disease. The section on paroxysmal rapid heart action is particularly good and emphasizes the importance of bedside medicine. The chapters on "Bronchial and Other Factors in the Production of Dyspnea," "The Clinical Significance of Systolic Murmur," "The Patient with Heart Disease as a Surgical and Obstetrical Risk," and "Factors Concerning Prognosis in Heart Disease" are particularly valuable.

The section on electrocardiography has been completely re-written and brought up to date with complete description of unipolar and precordial leads.

If one were to criticize this excellent book one might cite the absence of references from which readers may pursue any subject in which they are interested. Without references the reader must accept all statements as personal opinions of the author based on his experience. The book can be highly recommended.

* * *

ATLAS OF NORMAL RADIOGRAPHIC ANATOMY. By Isadore Meschan, M.A., M.D., Professor and Head of the Department of Radiology, University of Arkansas School of Medicine; With the Assistance of R.M.F. Farrer-Meschan, M.B., B.S. (Melbourne, Australia). 1044 illustrations on 362 Figures. W. B. Saunders Company, Philadelphia, 1951. 593 pages. $15.00.

This is a volume of about 600 pages dealing with normal roentgenographic findings. It is designed by the authors as a reference book. Tracings are provided to illustrate the gross anatomy of the individual films projected.

After a chapter on the fundamental background for radiographic anatomy, there are chapters dealing with microscopic and macroscopic aspects of bone, the radiographic anatomy of the upper and lower extremities, the skull and the brain. Then follow chapters on the vertebral column, the respiratory system, the mediastinum, the cardiovascular system, the gastrointestinal tract, the abdomen, and the urogenital tracts.

The information in the chapters dealing with the osseous, urinary and nervous systems is adequate, at least for students and residents. However, the sections on the respiratory, cardiovascular and alimentary systems reveal a lack of the information obtainable by clinical fluoroscopy, and therefore need augmentation in this respect.

The author uses some unusual terms such as "remnant radiation" (page 2). The time of ossification and union of the bony centra shows greater variation than indicated in his tables 1 and 2. The legends on figure 70 might bear further revision.

Most of the diagrams are well done, but several of the roentgenograms would bear replacement by more contrasty or better detailed examples. The printing is clear and the indexing adequate.

* * *

COMPARATIVE PHYSIOLOGY OF THE THYROID AND PARATHYROID. By Walter Fleischmann, M.D., Ph.D., Veterans Administration Hospital, Fort Howard, Maryland; Instructor in Pediatrics, The Johns Hopkins University School of Medicine, Baltimore, Maryland. Charles C. Thomas, Publisher, Springfield, Illinois, 1951. 78 pages. $2.25.

This small volume is a very competent review of the published data on comparative physiology of the thyroid and parathyroid glands. It should be of interest to endocrinologists and to investigators of thyroid and parathryoid function. Dr. Fleischmann reviews the literature showing how early in the cordates evidence can be found of thyroid

activity, follows it through the fish, quoting the studies by Marine and Lenhardt on the development of goiter in fish, and pointing out that no parathyroid activity is discoverable in any forms of life to and through the fishes.

For the first time in the amphibia is found parathyroid gland activity and parathyroidectomy is not difficult in these animals because the glands are not in association with other endocrines. Parathyroidectomy in frogs leads to a drop in blood calcium from 11.5 to 7.7 mgm. per 100 ml. and leads to death of the animal. The book reviews the many studies which have shown the necessity for thyroid tissue or iodine to bring about metamorphosis in the tadpole.

Little is known about thyroid activity in reptiles except that thyroidectomy prolongs the period between moultings, in snakes but does not prevent them, and there is no evidence of parathyroid activity in reptiles. From birds on up through mammals the function of parathyroid tissue seems to be quite closely akin to that in human beings and parathyroidectomy leads to a drop in blood calcium and death from tetany in a few days. Birds are particularly good subjects for studies on parathyroid activity because parathyroidectomy is simple and can be done without disturbing the thyroid gland itself.

It is in mammals particularly that extensive experimental work has been done which can readily be translated into human clinical problems. On reading this small volume through one cannot but be impressed by the great contributions that have been made to the understanding of human physiology through animal experimentation. With the advent of the anti-thyroid drugs and iodine 131 there is hardly a clinical problem arising in human beings upon which much light cannot be shed by carrying out studies on properly selected mammals. It is particularly impressive to note how many of our present accepted clinical procedures, in relation to disease of the thyroid and parathyroid glands, have had their origin in carefully conducted animal experimentation. For a timely review of the entire subject Dr. Fleischmann's book is highly recommended.

* * *

MANUAL THERAPY. By James B. Mennell, M.A., M.D., B.C. (Cantab.), Consulting Physician in Physical Medicine, St. Thomas's Hospital, Vice-President and Hon. Fellow, Chartered Society of Physiotherapy, London, England, Gold Key of the American Congress of Physical Medicine, Gold Key of the American Physical Therapy Association. Charles C. Thomas, Publisher, Springfield, 1951. 64 pages. $2.25.

This type of text has a very limited appeal to physicians in general. Its value is directly applicable to anyone doing a very large amount of physical therapy and using massage as an element of treatment. It reads easily and is very clear. Any student of physical therapy or physician directing his talent towards rehabilitation will find it a very useful and clear picture of massage technique. The text concerns itself primarily with technique and for that reason loses a universal appeal. The indications in value of massage therapy for the treatment of injury or disease of the musculoskeletal system are not discussed.

* * *

METHODS IN MEDICAL RESEARCH—Volume 4. By Maurice B. Vischner, M.D., Editor-in-Chief, Professor and Head, Department of Physiology, University of Minnesota Medical School. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, 1951. 306 pages. $7.00.

The latest volume in this series continues the high standards of earlier ones. It opens with a brief but precise section, by George Gomori, on histochemical staining methods. The second section (L. B. Flexner, associate editor) is devoted to methods for the estimation of total body water, plasma volume, extracellular fluid volume, and calcium ion concentration; it also deals authoritatively with the use of the flame photometer. The third section (S. P. Quigley) is concerned with studies on gastrointestinal pressures, innervation and secretions. The volume closes with a long section (C. M. Pomerat) on methods of tissue culture.

As was the case in previous volumes, each chapter is written by an appropriate authority; the earlier excellent custom of critical remarks by others has almost disappeared. Details of methods, bibliographies, and indexes to subjects and names appear to be satisfactory. The book is recommended to all medical librarians and to those individuals or groups interested in the designated topics.

* * *

COMMUNITY HEALTH EDUCATION IN ACTION. By Raymond S. Patterson, Ph.D., Director of Health Education, John Hancock Mutual Life Insurance Company, and Beryl J. Roberts, Ed.M., M.P.H., Associate in Health Education, Harvard School of Public Health. The C. V. Mosby Company, St. Louis, Missouri, 1951. 346 pages. $4.50.

In these days of growing appreciation that the physician must teach his patients, as well as dose them, there is at least one chapter of this book, "Education by Word-of-Mouth," which ought to be studied by every doctor, even though it is addressed primarily to persons whose major activity is community health education. Here is given lucid, usable information on the conditions under which patients can be taught and the methods of teaching which will be found most effective. Those of us who are ambitious to improve public relations for the medical profession will find much to help us in other parts of the book as well.

The contents include discussions of what is meant by health education and what health educators do, the basic principles of the learning process, specific advice on lecturing, writing, pamphleteering, radio and movie programs, and ways to appraise these methods and the results obtained through their use.

Without resorting to anecdotes and cute stories, a light touch is maintained throughout the volume, and it makes very easy reading. The authors are skillful in practicing what they preach.

* * *

PRACTICAL CLINICAL PSYCHIATRY—7th Edition. By Edward A. Strecker, A.M., Sc.D., Litt.D., LL.D., M.D., Professor of Psychiatry, School of Medicine, University of Pennsylvania; Franklin G. Ebaugh, M.D., Professor of Psychiatry, University of Colorado, School of Medicine; Jack R. Ewalt, M.D., Professor of Neuro-Psychiatry, University of Texas Medical Branch, Galveston. Section on **Psychologic Problems of Childhood** by Leo Kanner, M.D., Associate Professor of Psychiatry, Johns Hopkins University School of Medicine. The Blakiston Company, Philadelphia, 1951. 506 pages. $7.00.

The seventh edition of this standard textbook does not depart radically from its predecessors, but a good job has been done by the authors in keeping it abreast of recent advances in the field. This has always been an essentially practical book, and as such is well suited to the needs of the medical student. The approach is eclectic, and all points of view are given. The appended chapter on psychopathological problems of childhood by Kanner is well written, and should prove useful to all practitioners of medicine and especially to the pediatrician. In keeping the book up to date some of the simplicity of the earlier editions, a most desirable quality, has been sacrificed, but no doubt the increasing complexity of the field has made this inevitable. The rather scanty attention to the psychoneuroses in distinction to the phychoses makes this book of greater value to the medical student than to the physician, who, if he has chosen psychiatry as his specialty will not find it sufficiently profound, while if in general practice will miss a more complete treatment of the minor reaction types with which he must deal in everyday work.

MEDICAL TREATMENT—Principles and Their Application. Edited by Geoffrey Evans, M.D., F.R.C.P., Consulting Physician, St. Bartholomew's Hospital. The C. V. Mosby Company, St. Louis, 1951. 1398 pages of text and 66 pages of index. $20.00.

This book covers treatment in general practice. The classification is alphabetical, both for the subjects and within the framework of each subject heading. There are a number of disadvantages to this type of classification: these include the separation of related diseases and difficulty in finding subjects or remedies in cross-reference.

The presentation of general principles to serve as a guide to practitioners in their choice of treatment is emphasized and is admirable. There are, however, an omission of detail and too little of the scientific approach—two major criticisms of the book.

The antibiotics are subjected to more modern treatment than the reviewer has seen in most British texts. He cannot let pass, however, such statements as (page 32) "At present penicillin must be injected and precautions against sepsis are necessary. Outside hospitals, therefore, and also for reasons of economy, sulphonamides should be preferred when they are likely to be effective."

In the whole field of bone disease (page 128) only two subjects are considered; osteoporosis of the spine and Paget's disease. A total of five pages is given to these, less than half of which is devoted to treatment (and this is inadequate). If one turns through half the book to page 609, one will find some further discussion under the heading of parathyroid disease.

Despite its limited information, this is a practical, common-sense book which is generally up-to-date with regard to clinical practice. It may be compared to such American volumes as "Practical Therapeutics" by Rehfuss and Price and "Current Therapy" by Conn. It offers less than these volumes, however, and falls short of them in completeness and detail. To the American practitioner it can serve, therefore, only as an additional reference.

* * *

A HISTORY OF NURSING. By Gladys Sellew, Ph.D., R.N., Chairman of Department of Sociology and Social Work, Rosary College, River Forest, Illinois; and C. J. Nuesse, Ph.D., Assistant Professor of Sociology, The Catholic University of America, Washington, D. C. Second Edition. The C. V. Mosby Company, St. Louis, 1951. 437 pages. $3.75.

This book will be helpful to student nurses in appreciating that nursing services are closely related to all branches of human culture.

Beginning with care of the sick among primitive people and continuing through World War II, the authors show the interrelatedness of social, economic, religious and scientific advances upon nursing.

The evolution and expansion of professional nursing around the world is developed with special emphasis upon the forces that have influenced professional nursing in the United States. Graduate nurses will also find this book inspiring and most useful as a reference. It is an excellent text for the nursing instructor.

The revised edition includes much new material, especially the chapters dealing with contemporary American problems in nursing, and includes nursing trends outside the United States.

* * *

THE SPECIALTIES IN GENERAL PRACTICE. Edited by Russell L. Cecil, M.D., Professor of Clinical Medicine, Emeritus, Cornell University Medical College, New York. W. B. Saunders Company, Philadelphia, 1951. 818 pages. $14.50.

This book could be useful to many general practitioners, younger surgeons, internists and others who have had their training in the cloistered halls of the hospital and are thoroughly familiar with sickle-cell anemia but not with dermatitis from cosmetics, or who are familiar with all the aspects of an acute bowel obstruction but are unfamiliar with warts around the fingernails. The book is well illustrated. Some of the illustrations are new although many of them are repeated from former publications. I suppose an illustration is just as good if we have seen it before but it gets tiresome seeing your old friends turn up again like this. The book is well indexed.

This volume attempts to present the diagnostic criteria and the most accepted form of therapy in the minor and common ailments in a series of special fields. The sections are not of equal value. Unquestionably the best section in the book is the one on psychiatry. It also appears to be the only one that was written specifically for this volume and is not only worth the reading but is interesting. The section on pediatrics is quite unsatisfactory. It is primarily a discussion of feeding and immunizing the normal infant with a few pages on the age of election for operations. The two sections on orthopedic surgery and fractures and dislocations seem to be quite satisfactory and much superior to a recent volume on office and minor orthopedics. Even in these sections much valuable material has been left out—only one method of treating a fracture of the clavicle is described which the reviewer's personal experience would indicate is far from applicable in all cases. The section on diseases of the anus, rectum and colon is quite satisfactory, whereas the sections on gynecology and obstetrics seem to be quite routine. The three sections on ophthalmology, diseases of the nose and throat, and diseases of the larynx, bronchi and esophagus are satisfactory for the brevity required of them but the descriptions of such procedures as tonsillectomy seem neither sufficient to instruct one unfamiliar with the procedure nor adequate to refresh the memory of one who had become rusty. The reviewer wonders whether the section on surgery had been brought up to date. The author suggests that surgical excision of warts is a satisfactory procedure, whereas most schools and texts are teaching other methods. Also, this section recommends that animal and human bites be treated by fuming nitric acid, a procedure certainly not in accordance with current teaching. The section on urology is satisfactory except that the charts of symptoms, abnormalities and diseases seems rather unclear and would be more satisfactory with more explanation.

For the physician who wants to invest in only a single volume this book would probably be more satisfactory than any other volume of this nature that has come to the reviewer's attention. However, most physicians would be dissatisfied with the brevity and probably most would prefer a textbook on each of the fields covered.

* * *

INCONTINENCE IN OLD PEOPLE. By John C. Brocklehurst, M.D., Major R.A.M.C., formerly Christine Hansen Research Fellow in the University of Glasgow. E. & S. Livingstone, Ltd., 16 & 17 Teviot Place, Edinburgh, 1951. 191 pages. $6.50. (Distributed by Williams and Wilkins Co., Baltimore.)

This monograph from Scotland, which reviews but does not significantly add to or interpret the previous work on bladder physiology and dysfunction, can be recommended for perusal by urologists but is of less value to the general physician. Most of the conclusions regarding treatment are negative, in spite of various experiments on small groups of incontinent senile patients which showed that the main predisposing factor was a lesion of the central nervous system from senile degeneration or specific organic disease which caused an uninhibited neurogenic bladder. In the conclusion, the author offers a molded bed as his contribution to the care of the aged incontinent patient.

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Management of Carcinoma of the Uterine Cervix

IAN MACDONALD, M.D., and LEWIS W. GUISS, M.D., *Los Angeles*

SUMMARY

The long, occult phase of pre-invasive carcinoma of the uterine cervix provides the clinician with his greatest opportunity in the actual prophylaxis of invasive cancer. By the use of four-quadrant biopsies and Papanicolaou smears, the authors increased by almost 20 times the frequency of diagnosis of pre-invasive carcinoma of the uterine cervix.

Radiation therapy of invasive carcinoma in 147 patients produced five-year "cure" in 84 per cent of stage I cases, 65 per cent of stage II cases. The over-all rate for stages I to IV, inclusive, was 51 per cent.

Surgical management of this form of cancer, with preservation of the urinary tract, is an inadequate operation as judged by the extirpative standards observed in operations for cancer at other major anatomical sites.

Improvements in technique of irradiation, more accurate measurements of depth dosage at critical sites, and more uniform dosage throughout the parametrial areas, have decreased the incidence of major complications of irradiation.

Radical panhysterectomy and pelvic node dissection should be reserved for patients proved to have radioresistant lesions.

The application of routine block dissection of pelvic nodes for Stage I and Stage II lesions, clinically controlled by irradiation, is of doubtful theoretic, and no evident practical value.

Subject to future evaluation, pelvic eviscerative procedures seem to offer some salvage in cases of recurrent (occasionally primary) advanced lesions in rigidly selected patients.

THIS report is concerned with experience of the authors in the diagnosis and management of carcinoma of the uterine cervix, in private practice, during a period of seven years from 1943 to 1950.[5] The main objective is a discussion of three aspects of the management of this statistically important form of cancer: Diagnostic methods in the detection of pre-invasive carcinoma; end results of treatment by radiation therapy, and pelvic exenterative procedures for advanced recurrent lesions.

Presented before the Section on Obstetrics and Gynecology at the 80th Annual Session of the California Medical Association, May 13-16, 1951.

From the Department of Surgery, School of Medicine, University of Southern California.

The total number of patients observed, including those with pre-invasive and those with invasive forms of the disease, was 244; and the records of 147 patients treated for invasive lesions are now available for analysis of five-year end results.

In the series there was a gratifying preponderance of cases in which the stage of disease was anatomically early or only moderately advanced (Table 1) —in sharp contrast to the experience of most clinics and individual physicians even a decade ago. Approximately one out of four patients observed had a Stage I lesion, and only one out of four had lesion of Stage III or IV. The rest had disease in some phase of extension represented by Stage II. It must

TABLE 1.—*Stage of Carcinoma of Cervix Uteri in 244 Patients (1943 to 1950)*

Stage*	No. of Cases	Per cent
0†	15	6
I	56	23
II	114	47
III	37	15
IV	22	9
Total	244	100

*League of Nations.
†Pre-invasive carcinoma.

be borne in mind, however, that in the League of Nations staging there is a wide range of involvement included in Stage II—from the earliest possible extension beyond the cervix proper up to and including the advanced involvement which may fall just short of Stage III. In general, the favorable preponderance of early stages of the disease in this series is a reflection of the awareness and diagnostic acumen of the physicians who referred most of the patients; to a lesser extent it represents knowledge of the danger signals in this form of cancer on the part of the patients themselves.

In cancer of the uterine cervix, unlike most of the other major forms of cancer, early diagnosis after the development of the first symptoms is of distinct importance. For the patients with clinical control of the disease at the end of five years, the average delay between onset of symptoms and treatment was 5.2 months, and in the uncontrolled group the average delay was eight months. It should not be assumed from this, however, that there is any exact parallel between the delay before treatment and the progress or spatial extent of the disease even in this form of cancer; for at one extreme there may be no symptoms in the presence of advanced disease, and at the other long duration of symptoms with minimal lesion.

Although the concept of carcinoma in situ was clearly outlined as long ago as the last decade of the past century, only in the last few years has there been relatively frequent clinical detection of the lesion in the uterine cervix at this early stage. Until the end of 1946 the diagnosis of pre-invasive carcinoma was, for the authors, a rare experience. During a two-and-a-half-year period ending with 1946, usually not more than one biopsy specimen was taken from a cervix that appeared abnormal. In the next two years Papanicolaou smears were obtained in such instances, although the method was not ordinarily employed unless there was gross evidence of abnormality. The use of the Papanicolaou smear apparently greatly increased the relative frequency of diagnosis of carcinoma in the pre-invasive stage. Then, in 1948, Stewart and Foote[3] reported that increasing the number of biopsies in each case greatly enhanced the diagnosis of carcinoma in an early stage: With a single biopsy, diagnosis of pre-invasive cancer, when present, was made in 27 per cent of cases; with four biopsies, one from each quadrant of the cervix, diagnosis of cancer in the pre-invasive stage was made in more than 90 per cent of cases in which it was present. The authors thereupon began the routine practice of obtaining biopsies from each of four quadrants of the cervix. The validity of the conclusions of Stewart and Foote was endorsed in almost dramatic fashion by the extraordinary increase in the percentage of cases in which cancer was diagnosed in a pre-invasive stage in the next two years. In that period, one in five of the patients observed by the authors was treated for pre-invasive cancer, as compared to one in one hundred when only single biopsies were used and four out of one hundred with single biopsies and Papanicolaou smears. The importance of multiple biopsies in detecting pre-invasive carcinoma is further underscored by the greatly increased incidence of the diagnosis of the disease at that stage among all patients with any kind of gynecologic lesion. With single biopsy, carcinoma at an early stage was diagnosed in only 0.33 per cent of all women with gynecologic lesions of any sort, while with four quadrant

TABLE 2.—*A Report of Five-Year End Results—Cancer of the Uterine Cervix*

This series consists of all patients with cancer of the uterine cervix, both early and advanced, during the period 1943 to 1947, whose treatment was managed by the authors.

General Summary	Number of cases
Total experience—all patients applying	171
Patients not previously treated	147
Patients previously treated	0
OTHER—	
a. Applied after treatment elsewhere, no evidence of cancer on admission or thereafter	6
b. Consultation only, no treatment requested	18

SECTION A.—*Patients not previously treated*

Result at end of five years	Number of cases with microscopic proof
GROUP I—	
c. Refused proffered treatment	0
d. Untraced for full five years but without recurrence at last examination	3
GROUP II—	
e. Dead within five years of other causes without recurrence of cancer	3
GROUP III—	
f. Dead, cancer present or died of complications of treatment	61
g. Dead—presence of cancer unknown	0
h. Living with cancer present at 5 years	2
i. Living with condition unknown at 5 years	1
j. Untraced full five years with cancer at last examination	4
GROUP IV—	
k. Living, continously free of cancer, verified by medical examination at 5 years*	72
l. Living, apparently free of cancer, not verified by examination at 5 years	0
m. Living, successfully treated for recurrence, free of cancer at 5 years	1
Total	147

*Five-year cure rate for patients more than 3 but less than 5 years predicted by formula of Meigs and Jaffe.

TABLE 3.—*Relative Incidence of Diagnosis of Pre-Invasive and Invasive Carcinoma (244 Patients)*

Period	Diagnostic method	Lesion: Pre-invasive Per cent	Lesion: Invasive Per cent
Mid-1943 through 1946	Single biopsy only	0.9	99.1
1947	Single biopsy plus Papanicolaou smear	5.0	95.0
1948	Single biopsy plus Papanicolaou smear	3.4	96.6
1949	4 quadrant biopsies plus Papanicolaou smear	23.0	77.0
1950	4 quadrant biopsies plus Papanicolaou smear	16.0	84.0

TABLE 4.—*Incidence of Pre-Invasive Carcinoma in 697 Patients with Other Gynecologic Lesions*

Period	Diagnostic methods	Incidence of In Situ Cancer Per cent
1944 through 1946	Single biopsy only	0.33
1947	Single biopsy plus Papanicolaou smear	1.6
1948	Single biopsy plus Papanicolaou smear	1.0
1949	4 quadrant biopsies plus Papanicolaou smear	7.0
1950	4 quadrant biopsies plus Papanicolaou smear	7.0

biopsies this figure became 7 per cent—more than 20 times greater (see Tables 3 and 4).

Similar evidence is provided by the experience of a pathologist* in a private general hospital who had two contrasting kinds of material for study: One was specimens taken from suspect cervices, the other was cervices, with no evident lesion, which were removed in total hysterectomy. He observed that in the biopsy material, usually single specimens, carcinoma was noted in only 7 per cent. In the material provided by total hysterectomy, with multiple blocks for study, usually 10 to 15 in number, pre-invasive carcinoma of the cervix was noted in 5 per cent of the organs that appeared normal in gross examination. (This is, of course, an additional indication of the necessity of total, rather than subtotal, hysterectomy.) In view of the established fact that pre-invasive lesions exist as such for years rather than months, detection of them by multiple biopsies is the best means of prophylaxis of invasive cancer in an important organ site.

The authors excise cervical biopsy specimens as an office procedure without anesthetic of any kind. A conventional cervical biopsy punch is used in most cases, but if the cervix is unusually firm, a combination of scalpel and punch is employed.

In all cases of pre-invasive cancer, total hysterectomy was done, usually with the preservation of the adnexae in the younger women in whom this lesion is most commonly found. Neither pathological study of the uterus in such cases nor the subsequent course of the patients has indicated that the therapeutic approach should be either more radical or less aggressive.

During the past few years a few highly qualified surgeons have begun to reinvestigate the value of the surgical treatment of invasive carcinoma of the uterine cervix under modern surgical conditions. Unhappily the publication and discussion of reports of these investigations, the end results of which are not yet available, have encouraged some less able surgeons to attack this form of cancer surgically. Too often the procedures are glorified versions of ordinary panhysterectomy, and the increasing frequency with which local vaginal vault recurrences are being observed is evidence of the inadequacy of the treatment.

The authors do not propose to join whatever controversy may exist regarding the surgical treatment of "operable" cancer of the uterine cervix, for it is believed that, on the basis of anatomical considerations, no room for controversy properly exists. Judged by the surgical principles which govern the extirpative treatment of cancer in other anatomical sites, radical operation for lesions of the uterine cervix is simply not consistent with preservation of the urinary tract. As the ureters lie only 2 centimeters from the cervix on each side, and as the bladder is in intimate contact with the lower uterine segment, not even mediocre operation for cancer in the paracervical triangle can be carried out if salvage of these adjacent structures is attempted. As far as the primary lesion is concerned, therefore, even the most radical efforts short of diversion of the urinary stream are inadequate. The superiority of the surgical attack, properly done, is in the block dissection of distant groups of pelvic lymph nodes; but nothing is gained if this advantage is more than cancelled out by an undue proportion of local recurrences. Radiation therapy, on the other hand, is highly effective in permanent eradication of the primary lesion, and while its efficacy in destroying metastatic cancer in lymph nodes is still a matter of some debate, the over-all efficacy of irradiation is rather accurately determined, in this form of cancer, by the end results after an interval of five years.

Results in terms of five-year control, without clinical evidence of recurrence, for 147 patients treated from 1943 to February 1948, are given in Table 5. (Patients who had been treated more than three years but less than five years before this review was compiled, and who still survived without any evidence of disease, were included in the calculation of

TABLE 5.—*Invasive Carcinoma of Cervix Uteri—Five-Year "Cure" Rates with Radiation Therapy*

Stage*	No.	Five-Year "Cures" Per cent
I	26	84
II	83	65
III	24	12
IV	14	0
Total	147	51

*James E. Kahler, M.D., St. Vincent's Hospital, Los Angeles.

*League of Nations.

five-year end results according to the method of Meigs and Jaffe. These investigators reported that at the end of three years the five-year end results, statistically speaking, could be forecast with an accuracy of plus or minus 5 per cent by deducting 15 per cent from the number of patients with three-year control.)

In this series of patients given radiation therapy, the five-year end results for both Stage I and Stage II carcinomas, which are the lesions considered "operable," were considerably better than any surgical results known to the authors. Survival without disease for five years or more in 65 per cent of the Stage II cases is of particular importance, for this was an unselected group of Stage II lesions and included some which would be considered inoperable by investigators who are studying the primary surgical management of this disease. The range of Stage II lesions in this series was from any which had barely escaped beyond the uterine cervix up to and including any in which there was bulky involvement without attachment to the lateral pelvic wall. This heterogenous group was divided into early and late phases of Stage II; in the less advanced cases the five-year rate of survival without disease was 72 per cent, while in the cases in which the lesion was more advanced, the five-year "cure" rate was 42 per cent.

With continued advance of the disease to Stages III and IV, radiation therapy becomes progressively less effective. None of the 14 patients with Stage IV carcinoma survived five years. (The authors have some doubt that the occasional instances of five-year "cure" of Stage IV lesions are valid; it is believed that reports of such cases may be based on error in clinical appraisal of the stage such as might occur in the presence of associated inflammatory processes.)

The end results of irradiation treatment in 14 cases of carcinoma of the uterine cervix remaining as a stump after subtotal hysterectomy were as follows: Five-year "cure" rate for Stage I lesions, 80 per cent; for Stage II, 33 per cent; for Stage III, 0. It will be noted that in the cases of cancer in the uterine stump the five-year "cure" rate for Stage I lesions was slightly lower than the corresponding figure for the series as a whole (80 per cent against 84 per cent) and that there was wide disparity with regard to Stage II cases—a 33 per cent "cure" rate in the stump cases compared with 65 per cent for all Stage II cases in the series. If the diluting effect of the results in stump cases be removed, the "cure" rate for cancer of the cervix in the larger group in which the uterus was intact was: For Stage I lesions, 88 per cent; for Stage II, 72 per cent.

COMPLICATIONS WITH RADIATION TREATMENT

Any therapeutic attack on cancer must be appraised in the light of concomitant morbidity and mortality, as well as on the basis of success in clinical control of the disease. The rather successful end results in this group of patients were not achieved without an appreciably higher incidence of complications than is reported by most radiation therapists (Table 6). As to definition of "minor" and "major" complications in Table 6: Considered as minor complaints were persistent reactions in the vaginal vault, the bladder or the rectum which lasted more than one month but less than six months following irradiation. Most common of these were persistent areas of radiation necrosis in the cervical stump, and persistent, mild proctitis. Major complications were those which persisted for more than six months. Usually they were caused by some degree of rectal damage; less commonly by injury to the bladder, most frequently manifested by bullous edema; and, rarely, by injurious sequelae in the small intestine.

TABLE 6.—*Complications with Radiation Therapy*

Stage	Major Per cent	Minor Per cent
I	4	8
II	12	8
III	0	12
IV	0	0

Severe factitial proctitis, rectovaginal fistulae, or severe radiation enteritis developed in seven (6 per cent) of 109 patients who had Stage I or Stage II lesions. Two of these patients (or 1.7 per cent) died as a result of these complications, one from perforation of an adherent coil of ileum in the pelvis with pelvic peritonitis, and the other from vesical and intestinal fistulae and peritonitis following an ill-advised surgical attempt at hysterectomy because of radiation necrosis of the vaginal vault. The remaining five patients were alive and free of disease following surgical intervention. Three of them have permanent colostomy and restoring the continuity of the bowel seems infeasible. In the other two, resection and end-to-end anastomosis of the bowel was successfully carried out.

In a critical review of such complications of radiation therapy it is necessary to analyze the methods and dosage used in the complicated and uncomplicated cases. Since the earlier patients in this series were treated, there have been improvements and refinements in therapeutic techniques and in calculations of depth dosage of irradiation. All of the patients were treated on a highly individual basis with respect to such factors as the dimensions of the pelvis and the features and circumstances of the neoplasm in each patient; consideration was given to the presence or absence of infection; to the presence and extent of forniceal involvement and distortion; to the nature of the lesion—large extrovertive or ulcerative and infiltrating—and to the presence of concurrent gynecologic disease such as myomata, and fixed retroversion of the corpus.

The authors prefer to give the entire course of external x-radiation before radium is employed, because it has the twofold effect of reducing the amount of secondary infection which is uniformly present and causing some degree of regression of the neoplasm. It is not, in fact, uncommon to observe complete regression of gross evidence of cancer following x-ray therapy.

High voltage x-ray treatment from a 200 KV unit was employed, with a half value layer equivalent either to 1.50 or 1.75 mm. of copper, depending upon the individual patient, four 10 x 15 cm. pelvic portals, two anterior and two posterior, and delivery of a total dose, measured in air, of 1,800 to 2,600 r to each portal over a period of three and one-half to four weeks. This was followed by intra-uterine and intravaginal radium therapy in one to three sessions, usually two treatments seven to ten days apart. A variety of intra-uterine and intravaginal applicators were used to suit individual lesions. The dosage in terms of milligram-hours has varied from 4,000 to 7,500.

Exact methods in the measurement of depth dose at arbitrary points in the pelvis are emphasized by the Manchester group.[6] In Figure 1 such a point, *A*, is indicated at the lateral portion of the so-called paracervical triangle; it is 2 cm. lateral to the cervix and 2 cm. above the lateral fornix, at the point at which the uterine artery and the ureter cross. A theoretical optimum dosage at that point, consisting of the combined contribution of external radiation and intra-uterine and intravaginal radium therapy, is in the range of 8 to 12 Threshold Erythema Doses (TED). The part played by radium in contributing to this dosage is, of course, significant, while the considerably smaller dosage that can be achieved at point *B*, 5 cm. lateral to the cervix (see Figure 1), is mainly contributed by x-radiation. The work of the Manchester group also indicated that the relative contribution to dosage of intravaginal and intra-uterine sources should be, respectively, in the order of two to one, rather than the one to one ratio frequently employed and formerly used by the authors.

In the earlier cases treated by one of the authors (I. M.) both the anterior and posterior portals for x-radiation were placed close to the midline and the beam of radiation was angled medially, particularly in early, favorable cases, to cross-fire the paracervical triangle. In a review of the data on those cases it was noted that in some of them the dosage received at point *A* was in the range of 15 to 18 TED owing to excessive dosage contributed from external irradiation at that point, as well as to the undue delivery of dosage from radium placed within the uterine canal. For the past three years the authors have placed the skin portals for x-radiation farther to the side and have abandoned angulation of the beam toward the midline. Present indications are that, with the dosage at point *A* thus reduced to a range of 8 to 12 TED, the incidence of major complications will be considerably less; the incidence has been less than 6 per cent since this modification was adopted.

The effort to achieve a more uniform and higher dosage in the parametria, and thus to secure more adequate dosages in the area represented by point *B*, has been the objective of certain modifications in the plan of external rotengen therapy suggested by Fletcher.[2] Figure 2, reproduced from Fletcher's

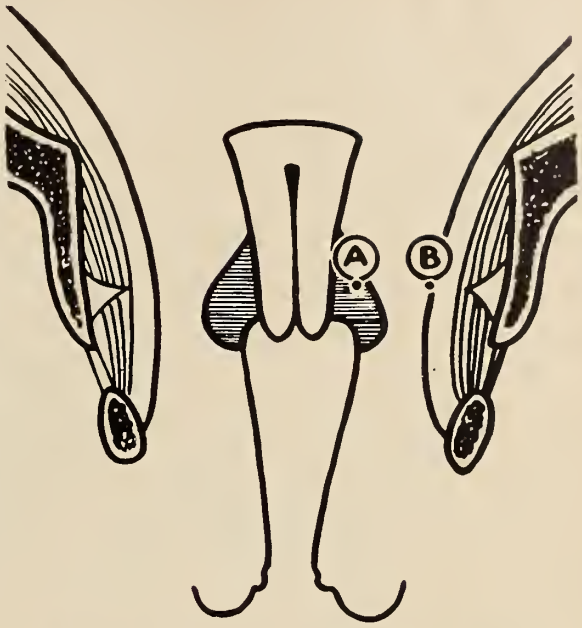

Figure 1.—Point A, at the crossing of the ureter with the uterine artery.

article, is a perspective drawing of the nodes on the pelvic wall, where various groups of nodes, from the obturator foramen nodes anteriorly to the hypogastric and uterosacral nodes posteriorly, are included in a shaded rectangular cuboid adjacent to the pelvic wall. The anteroposterior length of this hypothetical cuboid is about 10 cm. and its depth 5 to 7 cm. Fletcher's thesis, simply stated, is that external radiation should be more specifically designed to supplement the dosage of radium outside of the central area where the radium itself has an effective lethal range of dosage. The fundamental principle is the use of portals as small as possible, thus reducing square area from 150 square centimeters to a range of 50 to 80 square centimeters, and placing them more laterally in order to deliver greatly increased depth doses laterally in the pelvis while avoiding the midline and paracervical tissues.

SURGICAL CONSIDERATIONS

As was noted previously, there seems to be general agreement that total hysterectomy is the method of choice for treatment of carcinoma in situ, and that the end results justify this form of therapy. The authors have not observed recurrence following this form of treatment. There is no general agreement yet as to whether it is possible to establish definitely a diagnosis of "in situ" disease on clinical examination alone. TeLinde and Galvin[7] recently found that a high percentage of cases clinically diagnosed as in situ lesions proved actually to be invasive carcinoma on careful histologic examination of the surgical specimens. It is essential that adequate examination and multiple biopsy be carried out to establish as accurately as possible that the process is truly in situ, before hysterectomy be

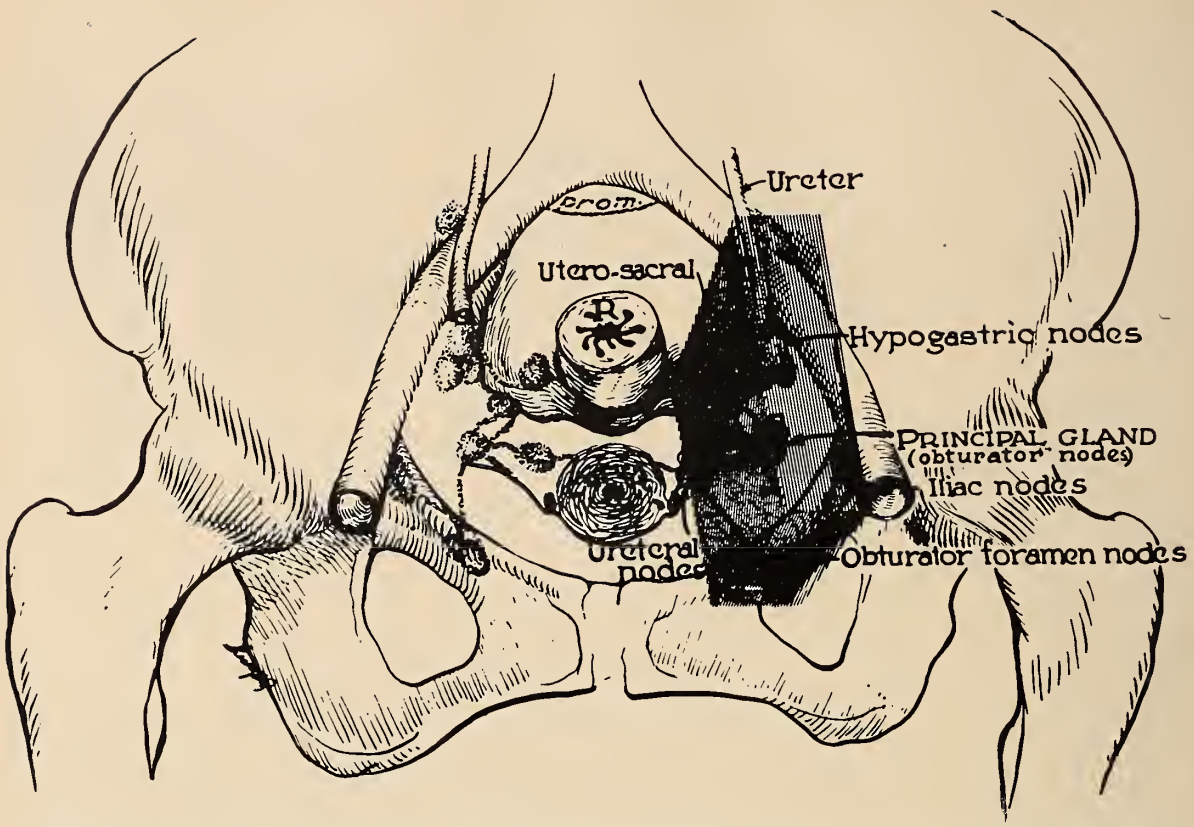

Figure 2.—Perspective drawing of the nodes on the pelvic wall, with a cuboidal zone shaded to include groups of nodes from the obturator foramen to the hypogastric nodes anteriorly and uterosacral nodes posteriorly (from Fletcher).

done; otherwise, in a Stage I case amenable to treatment by other means the opportunity for cure might be lost.

The role of operation in the treatment of primary invasive carcinoma of the uterine cervix is sharply limited by two factors previously set forth: The greater effectiveness of radiation techniques in controlling the primary lesion, and the anatomic considerations which make adequate operation incompatible with preservation of the urinary and/or gastrointestinal tracts. There remain two situations in which surgical intervention, at least theoretically, might improve upon the end results obtained by irradiation.

One is that in which the primary lesion of the cervix has been controlled by irradiation but in which there is residual carcinoma metastatic to the pelvic lymph nodes (mostly Stage II cases). The cure rate in such circumstances might well be improved by bilateral block dissection of the pelvic lymph-bearing tissues, either by the extraperitoneal or transperitoneal approaches. Early reports have shown some promise, but since it is impossible to determine preoperatively which patients might harbor metastatic nodes, it becomes mandatory that every patient be submitted to this procedure while still without clinical evidence of nodal disease if the potential improvement in salvage is to be realized. Thus, if the operation had been carried out in all cases of Stage II carcinoma in the present series, it would have been unwarranted for the 65 per cent of patients who were successfully treated by irradiation. Hence it would have been only in the remaining 35 per cent of cases that the operative treatment could have attained a questionable, theoretical improvement in end results; and it is unlikely that the salvage rate in those cases would have been very high. The authors believe, therefore, that to have subjected all the patients with Stage II lesions to the morbidity, to the possible mortality and to the expense entailed in such an operation, on the strength of mere possibility of a small gain in salvage, would not have been justifiable.

The second group in which operative intervention might be of benefit comprises patients with tumors that, despite adequate and accurate irradiation, prove to be radioresistant and incurable by this means.[4] In the present series, radical panhysterectomy (block removal of the uterus, adnexae, upper half of the vagina, parametrial tissues and pelvic lymph nodes) was carried out as soon as the radioincurability of the lesions became apparent. Attempt was made to determine this status as early as possible, by serial Papanicolaou smears and serial biopsies taken throughout the course of the irradiation treatment, but with indifferent success. It is now the authors' general policy to wait at least six weeks after termination of therapy before deciding

upon radical panhysterectomy. It is recognized that the operation does not remove an adequate margin of tissue in the critical paracervical region, but it is the best procedure available short of concomitant extirpation of the bladder and diversion of the urinary stream. The results obtained in such instances seem to justify the decision.

Recently the surgical procedure of pelvic evisceration (combined abdominoperineal resection of the uterus, bladder and rectum with pelvic node dissection and transplantation of the ureters into the colon) has been advocated by Bruschwig[1] for advanced primary or recurrent cancer of the cervix. This operation fulfills the criteria for adequate cancer surgery—that is, block resection of the primary site with adequate normal surrounding tissue, combined with a regional node dissection in continuity—but it entails a very appreciable operative mortality and postoperative morbidity. The authors used this procedure, with occasional modifications, in nine selected cases with some success. The single postsurgical death, caused by pulmonary embolism, occurred on the 28th postoperative day. One measure of the value of the procedure is the fact that the first patient operated upon, who not only had recurrent local disease but also bilateral pelvic node metastases, was alive and completely well at the time of this report, more than two years after operation. Two others died of recurrences. The remainder were alive and well at the time this report was prepared, a few weeks to 18 months after operation.

Rigid criteria are followed in the selection of candidates for this formidable procedure. Preferred are patients under 50 years of age who are not obese, and who are determined to be eligible after meticulous examination. Hardly less important are the psychological factors involved: The patient should have an indomitable will to live, and be mentally conditioned for the drastic physiological alteration she is to undergo.

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REFERENCES

1. Brunschwig, A., Complete excision of pelvic viscera for advanced carcinoma, Cancer 1:177-183, July 1948.

2. Fletcher, G. H., Roentgen treatment of cancer of the cervix, Radiology 54:832-842, June 1950.

3. Foote, F. W., Jr., and Stewart, F. W.: The anatomical distribution of intraepithelial epidermoid carcinomas of the cervix, Cancer 1:431-440, Sept. 1948.

4. Henriksen, E., The surgical treatment of cancer of the cervix, Radiology 54:819-821, Sept. 1948.

5. Macdonald, I., Carcinoma of the uterine cervix, Ann. West. Med. and Surg. 1:126-129, April 1949.

6. Paterson, R.: The Treatment of Malignant Diseases by Radium and X-Rays. Baltimore, Md., Williams and Wilkins Co., 1948.

7. TeLinde, R. W., and Galvin, G., The minimal histologic changes in biopsies to justify a diagnosis of cervical carcinoma, Am. J. Obst. and Gynec. 48:774, 1944.

Metastatic Carcinoma of the Thyroid Gland as the Initial Manifestation of the Disease

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SUMMARY

During the past 38 years, 260 patients with thyroid carcinoma have been operated upon at the University of California Hospital. In 26 of these patients the first symptom was a mass distant from the thyroid gland, and the gland was considered normal on clinical examination.

In all but three of the 26 cases a small carcinoma of the thyroid gland was observed at operation or in pathological examination.

Radical neck dissection with either total lobectomy or total thyroidectomy would seem to be the operation of choice in the treatment of these patients.

The ultimate prognosis, even in the presence of metastases, is relatively good.

Primary carcinoma of the thyroid gland should be considered in the presence of tumors of the side of the neck even in the absence of palpable nodules in the gland itself.

During the past 50 years much controversy has arisen over the true nature of tumors of the side of the neck in which thyroid tissue is observed in microscopic examination. The causes for such disagreement may be attributed to the unusual embryological development of the thyroid gland, to the fact that adenocarcinoma of the thyroid gland is often of a low grade of malignancy, and to the oftentimes insignificant size of the primary tumor in the presence of bulky metastases. In the absence of an obvious tumor in the thyroid gland, metastases in the neck often have been interpreted as lateral aberrant thyroid tissue. It is toward this group of neoplasms that this study will be directed.

From January 1912 to December 1950, 260 patients with microscopically proved carcinoma of the thyroid gland were operated upon at the University of California Hospital. In a surprising number of these patients, palpable evidence of neoplasm in the thyroid gland was not noted preoperatively and attention was directed to the thyroid gland only because microscopic biopsy of a tumor distant from it had proved the tumor to be of thyroid origin. Occasionally, when reexamination was carried out after a discovery of this kind, a suspicious area in the thyroid gland was noted, but usually no tumor could be palpated.

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ANALYSIS OF CASES

In a review of the 260 cases of adenocarcinoma of the thyroid it was noted that there were 26 patients who entered with complaint of a painless, asymptomatic mass, most frequently situated in the side of the neck. In preliminary examination of the thyroid gland by inspection and palpation it was observed to be essentially normal. The age range in this group of 26 patients was 10 to 61 years; for the entire series of 260 cases, the age range was 8 to 86 years. This accords with Ward's[13] observation that patients in whom distant tumor was the first symptom of thyroid cancer were, in general, younger than those who had the first symptom in the gland itself. Of the 26 patients, 27 per cent were male and 73 per cent female. In the complete series of thyroid carcinoma, 23 per cent were male and 77 per cent female (Table 1).

Clinical Observations. Most of the 26 patients previously mentioned had, as the first symptom, a painless nodule in the side of the neck. It was on the right side in about the same number of cases as on the left. In one patient the nodule was noted incidentally during examination because of other complaints. In four instances the site of the tumor was distant from the neck — namely, the clavicle, the pharynx, the breast and the parotid gland (Figure 1).

The duration of symptoms ranged from two months to 18 years, but in the majority of cases the patient had been aware of a mass or nodule for from one to four years prior to seeking consultation.

In none of these patients was any abnormality of the thyroid gland noted at the first examination by a physician. Even after attention had been directed to the gland by results of a biopsy of the distant mass, the thyroid gland was considered entirely normal on reexamination in 18 of the 26 cases. In the remaining eight cases the results of reexamination

Table 1.—*Age and Sex of 260 Patients with Thyroid Carcinoma*

	All Carcinomas of Thyroid	Carcinoma of Thyroid with First Symptoms Distant from Gland
Number of Patients	260	26
Age (years)	8-86	10-60
Female	77%	73%
Male	23%	27%

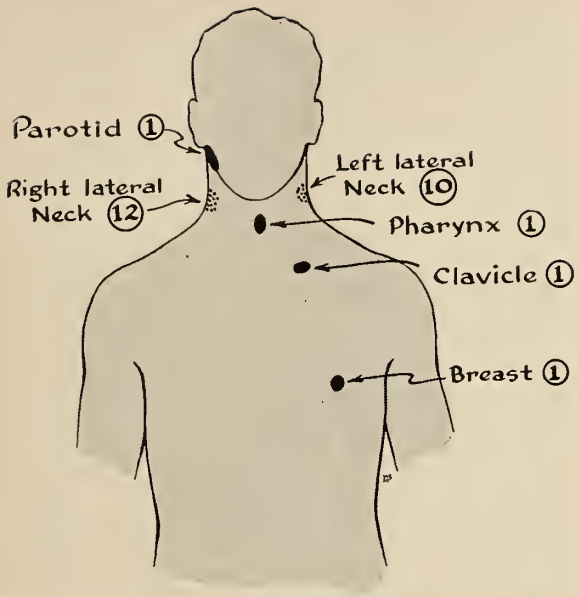

Figure 1.—Location of metastatic tumors distant from the thyroid gland in 26 cases. The nodules at these sites were the first indication to the patient or to the physician of the underlying condition. In few instances was the true nature of the growth even suspected.

TABLE 2.—*Clinical Observations in 26 Cases of Thyroid Carcinoma with First Symptoms Distant from Gland*

Chief Complaint	
Asymptomatic nodule in side of neck	22
Dysphagia	1
Ulcerated breast	1
Sternoclavicular pain and swelling	1
Fistula-in-ano (nodule incidental)	1
Symptom Duration: 2 months to 18 years	
Thyroid Palpation	
Normal gland	18
Questionable	8

were questionable and were not notable except in view of the evidence observed in the biopsy specimen taken from the metastatic site (Table 2). The clinical diagnoses entertained by the first physician to examine the patient, in order of frequency, were: "Lateral aberrant thyroid," lymphoma, nonspecific or tuberculous adenitis, branchial cleft cyst, metastatic carcinoma from an unknown primary lesion elsewhere, primary neoplasm of bone, pharynx, breast or parotid gland (Table 3). In some instances carcinoma metastatic from the thyroid gland was considered as an alternate diagnosis.

Treatment. The majority of these patients were treated by total thyroid lobectomy on the side of the lesion, together with either excision of palpable metastases or radical neck dissection (Table 4). In one patient no exploration of the thyroid gland was ever carried out. Subtotal or total thyroidectomy was done in the ten cases in which the primary neoplasm lay close to the midline. Ten patients received postoperative x-ray therapy to the neck or area of metastasis.

Figure 2.—Thyroid gland and metastatic nodules arranged to show relative location of metastases in the neck and illustrating the size of the primary tumor (arrows). In each instance a single metastatic lymph node lesion lay inferior to the gland. Note the small size of the primary tumor in relation to the metastatic lesions.

Pathological Observations. In all but three cases in this group, primary neoplasm of the thyroid gland was observed in microscopic examination. In one instance the lateral mass was removed and the gland itself was not explored. (The patient was alive, without recurrence, 14 years after operation.) The failure to find a carcinoma in the thyroid gland in the other two patients probably reflects the difficulty in locating these minute tumors and not necessarily the absence of a primary focus in the gland.

In three cases the thyroid tumor was reported as histologically benign. In one of the three cases, the node in the lateral neck was reported as benign and the thyroid gland was not examined. In another, benign aberrant thyroid tissue and benign papillary

TABLE 3.—*Preoperative Diagnosis in 26 Cases of Thyroid Carcinoma with First Symptoms Distant from Gland*

Lateral aberrant thyroid	6
Lymphoma	3
Inflammatory cervical adenitis	2
Branchial cleft cyst	2
Metastatic from unknown primary	2
Carcinoma of breast	1
Carcinoma of pharynx	1
Primary bone tumor	1
Primary parotid tumor	1
Not stated	7

TABLE 4.—*Operative Treatment of Patients with Thyroid Tumor First Manifest in Growth Distant from Gland*

	With excision of palpable nodules in neck	With radical neck dissection	With excision of distant metastases
No thyroid gland exploration	1	—	—
Lobectomy	4	6	2
Subtotal thyroidectomy	3	—	1
Total thyroidectomy	1	3	—
Unilateral lobectomy and unilateral subtotal thyroidectomy	—	4	—
Subtotal excision and x-ray therapy	1	—	—

TABLE 5.—*Pathologic Data on 26 Cases of Thyroid Carcinoma in which First Symptom was Mass Distant from Gland*

Microscopic Diagnosis	Number Patients
Papillary carcinoma of thyroid gland with lymph node metastasis	22
Embryonal cell carcinoma of thyroid gland with lymph node metastasis	1
Reported benign histologically	3
1 Thyroid gland not explored	
1 Benign lateral aberrant thyroid tissue with benign adenoma of the thyroid gland	
1 Carcinoma in lateral aberrant thyroid tissue with benign adenoma of thyroid gland	
No primary thyroid tumor found (Thyroid gland not explored in one patient)	3

adenomas in the gland itself were reported, while in the third case the pathological diagnosis was carcinoma in lateral aberrant thyroid tissue and benign adenoma of the thyroid gland. Despite these reports, all were probably metastatic malignant lesions, since thyroid carcinoma is notorious for benign microscopic appearance and clinical course. That a histological pattern of benignancy cannot be assumed to indicate the tumor will not metastasize has been noted by others. [2, 4, 6, 14] In 22 of the 26 cases the histologic pattern of the tumors was papillary (Table 5).

Prognosis. At the time of this report, 17 of the 26 patients were alive and well, without evidence of recurrence, from one month to 15 years after operation. Four patients were living and asymptomatic with known metastases, twelve, ten, four and two years after thyroidectomy. The recurrent tumors had been present for ten, four, three and one-half and one and one-half years, respectively. One patient died of an intercurrent condition without reported evidence of recurrent carcinoma. In four patients, death was due directly to the cancer and metastases.

DISCUSSION

The principal part of the related literature during the early half of this century and as recently as 1946[7, 10] is concerned with the intriguing concept of the deposit of thyroid "cell rests" in the side of the neck during the development of the gland. Although opinion is divided as to the exact origin of the lateral component, it is generally accepted that the thyroid gland is formed from a median pharyngeal outpouching with two lateral primordia, each comprising about one-third of its adult bulk. The proponents of the presence of lateral aberrant thyroid tissue believe that bits of tissue are deposited during this migration in the lateral neck in a manner similar to that which is known to occur along the median tract. Because of incomplete fusion of these lateral components to the thyroid gland, they remain in the neck as benign tumors, or, more commonly undergo malignant degeneration.[1, 3, 7, 8, 9, 11, 12, 13] Some investigators even go so far as to explain an associated neoplasm in the thyroid itself as a secondary metastasis from the "lateral aberrant carcinoma."

Cohn and Stewart[3] in 1940, Frantz and co-workers[5] in 1942, and Lahey and Ficarra[10] in 1946 aptly reviewed the evolution of thought concerning the question of "cell rests" and lateral thyroid nodules. Clay and Blackman[2] stated that as early as 1917 Wohl had questioned this theory and proposed the perhaps more logical concept that these tumors were lymph nodes containing metastatic carcinoma of thyroid origin. During the last decade sufficient evidence has been compiled to show convincingly that true lateral aberrant thyroid tissue rarely if ever exists and that such nodules actually represent lymph node metastases from a primary carcinoma of the thyroid. Often the host has such a remarkable tolerance for this neoplasm that a state of symbiosis may exist for years, even in the presence of generalized metastases. In addition, these metastatic lesions are often associated with a clinically insignificant, occasionally microscopic primary tumor in the thyroid gland.

The clinical observations are often disarming. The masses may be present in the side of the neck for a number of years and reach large proportions without causing undue symptoms. The patient's general health and well-being seldom are affected as by the usual inroads of malignant disease.

The surgical management of patients with thyroid tumor depends largely on the location of the tumor within the thyroid gland and its proximity to the midline. As far as the thyroid gland itself is concerned, when the tumor lies well out in a lateral lobe, complete removal of the involved lobe and the isthmus has generally been considered adequate. However, if the tumor is in or bordering on the isthmus, resection of the opposite lobe as well is necessary.

No accurate comparison can be made between patients in this series treated by radical neck dissection and those treated by excision of palpable extracapsular metastases. This is because the more radical procedure was used in the advanced stages of the disease and more frequently in recent years, making long term follow-up impossible. It would seem that radical neck dissection is the operation of choice in most instances.

With regard to the ultimate prognosis for persons with this disease, the condition must be regarded as a relatively benign one even in the presence of inoperable metastases. As has been noted by Crile[4] and others,[5, 6] the mortality rate is low; in only four of the 26 cases in the present series could death be directly attributed to carcinoma of the thyroid gland.

REFERENCES

1. Cattell, R. B.: A more optimistic approach to cancer of the thyroid, West. J. Surg., 54:444-451, Nov. 1946.

2. Clay, R. C. and Blackman, S. S., Jr.: Lateral aberrant thyroid; metastasis to lymph nodes from primary carcinoma of thyroid gland, Arch. Surg., 48:223-228, March 1944.

3. Cohn, L. C. and Stewart, G. A.: Tumors of the lateral thyroid component, Arch. Surg., 40:585-605, April 1940.

4. Crile, G., Jr.: Papillary carcinoma of thyroid and lateral cervical region; so-called "lateral aberrant thyroid," Surg., Gynec. & Obst., 85:757-766, Dec. 1947.

5. Frantz, V. K., Forsythe, R., Hanford, J. M. and Rogers, W. M.: Lateral aberrant thyroids, Ann. Surg., 115:161-183, Feb. 1942.

6. Friedman, H. H.: So-called "benign metastasizing goiter," Arch. Surg. 46:377-385, March 1943.

7. Graham, A.: Accessory thyroids in litter-mate pups and in man; their relationship to the development of so-called "lateral aberrant thyroid" tumors in man, West. J. Surg., 54:428-443, Nov. 1946.

8. Hare, H. F.: Cancer of the thyroid, S. Clin. North America, 27:561-568, June 1947.

9. King, W. L. M. and Pemberton, J. de J.: So-called lateral aberrant thyroid tumors, Surg., Gynec. & Obst., 74:991-1001, May 1942.

10. Lahey, F. H. and Ficarra, F. J.: Lateral aberrant thyroid, Surg., Gynec. & Obst., 82:705-711, June 1946.

11. Smith, M. K.: Papillary adenoma of aberrant thyroid, Ann. Surg., 113:77-81, Jan. 1941.

12. Touroff, A. S. W.: Co-existing carcinomata of thyroid and aberrant thyroid with regional metastases, Ann. Surg., 113:73-76, Jan. 1941.

13. Ward, R.: Relation of tumors of lateral aberrant thyroid tissue to malignant disease of the thyroid gland, Arch. Surg., 40:606-645, April 1940.

14. Warren, S. and Feldman, J. D.: The nature of lateral "aberrant" thyroid tumors, Surg., Gynec. & Obst., 88: 31-44, January 1949.

Subacute Thyroiditis

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SUMMARY

Twenty-one cases of thyroiditis, generally considered a rare disease, were observed in the Los Angeles area in a period of less than two years. Eight of them were observed at one clinic in the course of six months.

Although diagnosis of the disease usually is made hesitantly or apologetically, and misdiagnosis is not uncommon, the clinical pattern is fairly characteristic.

Subacute thyroiditis may cause pronounced disability. Treatment with propylthiouracil or roentgen radiation appeared to be the most effective.

ALTHOUGH thyroiditis is reported to be a rare disease, the author observed 13 patients who had it, and has knowledge of eight other cases that occurred in the Los Angeles area, in the period from October 1948 to August 1950. Of the 21 cases reviewed in this presentation, eight were in patients observed at The Moore-White Clinic between September 1949 and February 1950. The occurrence of so many cases during a six-month period gives rise to wonder whether there might have been a common etiologic agent, such as a virus. In only one instance, however, was thyroiditis preceded by infectious disease of the upper respiratory tract, although during the fall of 1949 such infections were prevalent in Los Angeles. Moreover, there was no seasonal pattern of incidence; the onset of the disease in the 21 cases reviewed occurred in every month of the year except February and November.

CLINICAL FEATURES

In the present series there were 16 female and five male patients. Only 10 per cent of the 93 cases reported by Osmond and Portmann[9] were in men. The age range of patients in the present series was from 22 to 76 years; the average age was 41 years.

The first patient observed was not diagnosed as having thyroiditis until the seventh day of the illness, and even then the diagnosis was made timorously. Subsequently it was noted that while there may be a variety of primary symptoms, in most cases of subacute thyroiditis the clinical pattern is characteristic. It is remarkable, therefore, that the diagnosis so often is made apologetically, that it is so frequently missed, and that knowledge of the cause, the pathologic changes and the treatment is so scant.

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The duration of symptoms in the 21 cases reviewed was from five to 24 weeks and the average was ten weeks. Pain was the primary symptom in almost every case and in most patients it was localized in the region of the thyroid gland. Frequently the pain was thought to be deep in the pharynx rather than in the overlying structures. In some instances there was dysphagia and radiation of pain into the ear, the area about the ear, or the jaw—factors which might lead to erroneous diagnosis. Five of the patients had had pain of brief duration in the thyroid area several weeks or months before the onset of the thyroiditis. Seventeen of the patients had fever; in nine cases the temperature was more than 100° F. Fatigability, emotional instability, sweating and tachycardia were prominent features, and the severity of these phenomena seemed excessive for the degree of pathologic change in the thyroid gland. Significant acceleration of the basal metabolic rate or decrease in the cholesterol content of the blood was not observed. However, elevation in the protein-bound iodine content was present in five of the six cases in which the test was performed; the levels were 4.7, 8.8, 9.1, 9.3, 10.7 and 12.7 micrograms per 100 cc. respectively. Keating and associates[6] recorded similar values in four cases of subacute thyroiditis. Radioiodine tracer studies were not carried out. Abnormally low radioiodine uptake, characteristic of myxedema, was observed by Keating[6] and by Werner and associates.[12] Pronounced acceleration of the erythrocyte sedimentation rate was a characteristic feature in the present series, and the return to a normal rate was slow.

In most cases the thyroid gland was enlarged, tender to palpation and very firm. There was no change in the overlying skin. Gradual spread from one lobe, to the isthmus, then to the other lobe occurred in five cases as in the migratory thyroiditis reported by King.[7] In several cases the gland was nodular. This is a factor which may lead to erroneous diagnosis of thyroid adenoma. In one case in which surgical treatment for adenoma was carried out, pathological changes typical of thyroiditis were observed. In those cases in which there were nodes in the gland, the nodularity subsided at the end of the illness. The firmness of the gland in thyroiditis is such as to arouse suspicion of malignant disease,

NOTE: Nine of the patients were observed in The Moore-White Clinic. The author wishes to thank Drs. R. R. Commons, George Fein, C. H. Linsley and E. E. Wunderlich for permission to use data on patients observed by them, and Dr. Paul Starr for his constructive criticism and for permission to use reports of two cases from Los Angeles County General Hospital. Four of the patients were observed on the Medical Service, Wadsworth Hospital, Veterans Administration Center, Los Angeles, and data on them are published with the permission of the Chief Medical Director, Veterans Administration, who assumes no responsibility for the opinions expressed or the conclusions drawn by the author.

which is the reason thyroidectomy frequently is carried out. However, subacute thyroiditis is a characteristic disease, which runs a course to spontaneous cure.

TREATMENT

Evaluation of treatment is most difficult because the clinical course is so variable, a fact well illustrated in the literature by the lack of agreement on the preferred method of treatment.

When systemic symptoms are severe, rest in bed is indicated. Pronounced nervousness may be controlled with barbiturates. Severe pain necessitates the use of codeine or Demerol.® Local applications of hot compresses or ice packs give temporary relief without any apparent effect upon the course of the disease. Giving thyroid extract or iodides is not helpful.

Antibiotics have been used with varying results. The sulfonamides have no effect. Penicillin has been reported as beneficial by several investigators (Scheinberg;[10] Kast and Dannenberg;[5] Hertz[4]), although the specificity of the drug is open to question in several of the recorded cases. Penicillin was given to four patients in the present series without effect. In one case fever of 100° F. or more persisted during eight days of penicillin therapy, then subsided by lysis. Hertz[4] stated that streptomycin or aureomycin might be of benefit in subacute thyroiditis. However, no reports of cases in which it had been effective could be found. Aureomycin, in doses from 3.0 gm. to 4.0 gm. daily, was given to five patients and no improvement was noted. Fairly prompt subsidence of symptoms occurred in one case during aureomycin administration.

Roentgen radiation was reported by Crile[1, 2] and by Osmond and Portmann[9] to effect complete and prompt resolution. In the present series, three patients given x-ray therapy seemed not to benefit during treatment; two appeared to improve. The dosage used was 600 to 950 roentgens given over a period of six to 12 days.

Thiouracil in the therapy of subacute thyroiditis was recommended by King and Rosellini.[8] Propylthiouracil was used in doses of 200 mg. to 300 mg. daily in four cases in the present series. In each case there was prompt relief of pain, but the swelling did not regress for from five to 14 days. Although the number of patients treated was small, in the author's opinion the most prompt and effective remission of subjective and objective symptoms was obtained with propylthiouracil.

Myxedema is not a common sequela of subacute thyroiditis. Osmond and Portmann[9] recorded no instance of it in their series of 93 cases. However, Keating and co-workers[6] reported that myxedema developed in four of 16 cases. Clinical myxedema occurred in one of the 21 patients in the present series.

Operation was done in three of the 21 cases here reviewed—in one because of suspicion of malignant disease and in the other two because of the impression that an adenoma of the thyroid was present. In one case thyroiditis was proven by examination of a specimen removed with a Vim-Silverman needle.

ETIOLOGY

The term *thyroiditis* includes a variety of pathological conditions affecting the thyroid gland, all of which are considered, though not proved to be, inflammatory in origin. Acute suppurative thyroiditis is a clearly established entity which develops occasionally in association with systemic disease and from which may be isolated such organisms as Staphylococci, Escherichia coli and B. typhosus. Acute nonsuppurative and subacute thyroiditis, struma fibrosa (Reidel's struma) and struma lymphomatosa (Hashimoto's disease) also are thought to originate in either bacterial or viral inflammatory disease, although no proof for this belief has yet been presented. The term *subacute thyroiditis,* as discussed recently by Crile,[1, 2] is believed to best describe the cases presented herein, which were of a type reported originally in 1904 by de Quervain.[3] Despite much argument and theorizing, a direct relationship between subacute thyroiditis and Reidel's struma or Hashimoto's disease has not been established.

The etiologic factor initiating an attack of subacute thyroiditis is unknown, no organism having been isolated in the majority of cases. That the disease is of viral origin has been postulated since thyroiditis is reported to be frequently preceded by acute infection of the upper respiratory tract. However, no virus studies have been made, and the observation is open to question. Study of the cases in the present series indicates that the onset of thyroiditis may have been misdiagnosed as a respiratory infection because of the pain in the throat and, in some cases, earache. Schilling[11] suggested that the process might be initiated by an infectious agent, followed by acinar destruction and release of thyroglobulin into the intercellular spaces. Thus a secondary chemical inflammatory reaction might be induced, and the fairly long duration of the disease might be because of slow resorption. The duration of several months in some cases argues against an infectious agent as the sole cause of pathological change in thyroiditis. Also in this regard it is noteworthy that aureomycin was not effective. Should local epidemics of thyroiditis or concurrent cases in families be reported, there would be presumptive evidence of an infectious cause.

Osmond and Portmann[9] postulated that the beneficial effects of roentgen therapy in subacute thyroiditis might be due to inactivation of a virus by radiation, but this does not seem tenable in view of the response to propylthiouracil in the present series. If release of colloid into the interstitial tissue, as discussed by Schilling,[11] is a factor in the prolonged course of subacute thyroiditis, it is possible that the value of both thiouracil and x-ray therapy may lie in the prevention of further formation of colloid.

PATHOLOGY

All parts of the thyroid gland may be involved in the pathological process. The involved areas are very firm in consistency, white in color and adherent to the surrounding structures. On microscopic examination, normal acini are observed in the uninvolved areas contiguous to areas in which there is degeneration of acinar epithelium. Colloid can be seen lying outside the acini, and it is phagocytized by foreign body giant cells. Many polymorphonuclear leukocytes may be noted in some areas, which suggests focal necrosis. There is dense increase in fibrous tissue between the acini, and interspersed throughout are lymphocytes, histiocytes and plasma cells. Where the follicular epithelium is not destroyed, it often is hyperplastic with either basophilic or eosinophilic alteration in staining. The hyperplasia must be differentiated from common diffuse hyperplasia and from neoplasia.

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REFERENCES

1. Crile, G., Jr.: Practical Aspects of Thyroid Disease, Philadelphia, W. B. Saunders Company, 1949, pp. 307-317.

2. Crile, G., Jr., and Rumsey, E. W.: Subacute thyroiditis, J.A.M.A., 142:458, Feb. 18, 1950.

3. de Quervain, F.: Die akute, nicht eiterige Thyreoiditis und die Beteiligung der Schilddruse an akuten Intoxicationen und Infektionen uberhaupt, Mitt. A. D. Grenzgeb. d. Med. u. Chir., Jena, 1904, pp. 1-165.

4. Hertz, J.: Thyroiditis: diagnosis and treatment, J. Internat. Coll. Surgeons, 12:211, May-June 1949.

5. Kast, E., and Dannenberg, T.: Acute non-suppurative thyroiditis; report of two cases, Permanente Found. M. Bull., 3:142, July 1945.

6. Keating, F. R., Jr., Haines, S. F., Power, M. H., and Williams, M. M. D.: Radioiodine accumulating function of human thyroid gland as diagnostic test in clinical medicine, J. Clin. Endocrinol., 10:1425, 1950.

7. King, B. T.: Thyroiditis, West. J. Surg., 41:391, July 1933.

8. King, B. T., and Rosellini, L. J.: Treatment of acute thyroiditis with thiouracil; preliminary report, J.A.M.A., 129:267, Sept. 22, 1945.

9. Osmond, J. D., Jr., and Portmann, U. V.: Subacute (pseudotuberculosis, giant cell) thyroiditis and its treatment, Am. J. Roentgenol. Rad. Therapy, 61:826, June 1949.

10. Scheinberg, D.: Acute thyroiditis treated with penicillin, J. Tennessee M. A., 39:132, April 1946.

11. Schilling, J. A.: Struma lymphomatosa, struma fibrosa and thyroiditis, S. G. & O., 81:533, Nov. 1945.

12. Werner, S. C., Quimby, H., and Schmidt, C.: The use of tracer doses of radioactive iodine, I^{131}, in the study of normal and disordered thyroid function in man, J. Clin. Endocrinol., 9:342, 1949.

Common Lesions of the Urethra in Women

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SUMMARY

Urethral disease in women and girls often is overlooked. As the urine may seem to be normal as determined by repeated urinalysis, the symptoms—urinary frequency and burning—may be attributed entirely to other pelvic disease or to functional disorder. Since erroneous diagnosis may lead to unnecessary procedures or to neglect of treatment with consequent development of severe disease in the kidneys or ureters, it is important to consider urethral lesions as a possible cause in any case of abdominal discomfort in women.

The most common lesions of the urethra in women are urethritis, stricture, caruncle, inflammatory polyps and cysts, prolapse of the urethra, and diverticulum. In some cases diagnosis can be made simply on the basis of inspection and palpation. In others more extensive diagnostic procedures must be carried out in order that treatment may be definitive.

The methods of treatment, varying with the nature of the lesion, are outlined herein.

AN often overlooked cause of urinary frequency and urgency in women, with burning and pain when urine is discharged, is urethral disease of one kind or another.

In a study of 1,000 women with frequency of urination, Bugbee[2] noted that lesions of the urethra were partially or wholly responsible in 690 instances. Stevens,[11] in a report on 650 consecutive cases of urinary disturbances in women, said that in 123 cases the symptoms were caused entirely by disease of the urethra, and in 501 cases partly by lesions there.

In some cases of urethral disease there is referral of pain to the groin, to the lower abdomen, to the lumbar or sacral regions, to the rectum, or to the thighs. Misinterpretation of pelvic myalgia in such circumstances may lead to unnecessary operations or to diagnosis of psychoneurosis and to neglect of a distressing and potentially dangerous disease. It is particularly noteworthy that diagnostic attention may be misdirected because in urethral disease there may be no abnormality in the urine as determined by simple urinalysis.

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Lesions of the urethra should always be considered a possible source of abdominal discomfort in women. Recognition of them is important not only because of the distress they cause in themselves and the erroneous diagnoses and needless procedures that may result if they are overlooked, but also because of the back-pressure effects upon the upper urinary tract. Urethritis in young girls[10] particularly has never been given the emphasis merited by the incidence and importance of the disease. Too often in girls pyelitis is erroneously diagnosed and chronic urethritis overlooked or improperly evaluated until more serious disease results from it.

The most common urethral diseases in women are acute and chronic urethritis, stricture, caruncle, inflammatory polyps and cysts in the posterior urethra and in the neck of the bladder, prolapse of the urethra, and diverticulum.

ANATOMIC AND ETIOLOGIC FACTORS

As the urethra in females is close to the organs of the generative tract, it is susceptible to trauma at childbirth and to inflammation from being continually bathed in secretions arising from the vagina and cervix which contain a variety of pathogenic organisms. It is also exposed to contamination from the rectum. Hence the abatement of chronic endocervicitis or vaginitis and proper rectal and vaginal hygiene are important in the elimination of urethral inflammation. Opening on the floor of the urethra just within the meatus are para-urethral or Skene's glands (tubulo-alveolar glands) which play an important part in persistent infection, chiefly gonorrheal, in the urethra. A few observers[5] have noted that in some women there are glands in the posterior urethra closely resembling the prostate. Hypertrophy of these glands or infection in them may lead to urinary obstruction.

DIAGNOSIS AND TREATMENT

The diagnostic procedures—not all of them necessary in all cases, of course—consist of ordinary inspection and palpation of the urethra, determination of the diameter of the lumen (normally about 8 mm. in women), analysis and culture of urine removed by catheter, endoscopic and cystoscopic inspection, measurement of residual urine, histologic study of sections of removed tissue, and roentgenographic delineation of the urethral channel. In addition in many cases a complete urologic examination, including studies of renal function, ureteral catheterization, and x-ray visualization of the upper urinary tract, should be carried out in order to make sure that the disease is confined to the urethra. The more extensive examination is particularly impor-

tant if there is blood or pus in the urine. It should be borne in mind that lesions elsewhere in the urinary tract as well as diseases of the generative organs often coexist with urethral disease. They may cause symptoms similar to those of disease of the urethra, which is one reason for confusion and oversight in diagnosis.

Acute Inflammation of the Urethra

Acute urethritis in women is due in most instances to gonorrheal infection, but nonspecific infection of the urethra is commoner in females than in males. It may be caused by trauma in difficult labor, masturbation or coitus, by prolonged, too vigorous or too frequent instrumentation, by the instillation of strong chemical solutions, by the use of improperly sterilized catheters or instruments, or by the presence of other foreign bodies, such as calculi. Patients frequently note the onset of dysuria soon after catheterization following delivery or major operation, particularly operation on the pelvic organs. Interstitial urethritis may result from infection focused elsewhere in the body (tonsils, sinuses, teeth, cervix). Dietary errors, highly acid urine, and alcoholic excesses may cause much irritation in the urethra. The urethral changes may be secondary to cystitis or pyelonephritis. A constricted urinary meatus, interfering as it does with free drainage, predisposes to infection. In some cases the origin of the urethritis is indeterminate.

The symptoms are diurnal frequency, urgency, nocturia, burning, and pain on urination, dyspareunia and occasionally hematuria. The diagnosis is made on the basis of the history, physical examination, urinalysis, smears or culture of the urethral secretions, and at times examination of the urethra with a cystourethroscope.

Digital examination should be done by placing the index finger in the vagina and palpating the ventral surface of the structure. The urethra should then be gently stripped, particularly in the region of the Skene's glands. By this means, tenderness, thickening or induration of the urethra, suppuration or the presence of a diverticulum may be noted.

A patient with acute inflammation of the urethra must force fluids, eat a bland diet, abstain particularly from alcohol, tea and coffee, and take hot sitz baths daily. The urine should be alkalinized, and if causative organisms such as gonococci, colon bacilli or staphylococci are found, the appropriate sulfonamide or antibiotic should be given. In some cases rest in bed or rest off the feet should be insisted upon. If the meatus is narrow or partially stenosed, meatotomy should be done.

Chronic Inflammation of the Urethra

Chronic urethritis may follow gonorrheal infection, although it is less often a sequel now that there is widespread use of the sulfa drugs and antibiotics in the treatment of gonorrhea. Usually the urethra is tender and thickened, often with a stricture present. The organism may be noted in material stripped from the Skene's glands. The symptoms are urinary frequency and urgency and constant dull pain which is often referred to the suprapubic region, to the vagina or to points higher in the abdomen. The treatment is to force fluids, administer penicillin or one of the newer antibiotics and order hot sitz baths. Persistent foci of infection in the cervix, in Skene's glands or in Bartholin's glands should be cleared up.

Chronic nonspecific or nongonorrheal urethritis, a very common disease in women, occurs most often in patients in middle life and in married women. In many cases the cause is obscure but it is usually the aftermath of acute inflammation of the urethra. Neglect of vulvar hygiene, trauma of childbirth, irritation from sexual intercourse or masturbation, cervicitis, vaginitis, and infection at more remote points (teeth, sinuses, tonsils) are considered as etiological factors. Stricture of the meatus is a predisposing factor. Hunner[7] put great emphasis on focal infection elsewhere as a factor in nonspecific urethritis in women: "One learns by experience to suspect a distant focal infection as the etiological factor in any urinary tract lesion, whose symptoms appear only periodically, the intervals being marked by freedom from symptoms." The author agrees with this opinion and believes that with the use of the sulfa drugs and antibiotics there is a tendency to omit looking for foci of infection elsewhere, particularly in the bowel and the generative organs.

The usual symptoms of chronic urethritis in women are diurnal and nocturnal frequency, severe urgency, burning and pain on urination and often suprapubic and lumbosacral discomfort. Pronounced nervousness is often present. Less common are severe tenesmus, a sensation of incomplete emptying of the bladder, and stress incontinence. While hematuria occurs occasionally, by and large the results of urinalysis are normal. Upon inspection and examination with the finger in the vagina, the urethra may be noted to be slightly thickened or indurated, reddened, and tender. Passage of a catheter or sound may be difficult because of sensitivity or stricture. A pelvic examination, including speculum examination of the cervix, should be carried out. There may be contraction and sclerosis of the urinary meatus and inflammation of the Skene's ducts. The inflammatory changes, however, usually are limited to the deeper portions of the urethra[3] and the bladder neck. When cystocopic examination is carried out, inflammation of the entire urethra may be noted, but it is more pronounced in the posterior portion where the blood vessels are prominent. The mucosa has a red, granular, irregular appearance. Inflammation often extends from the urethra onto the trigone of the bladder, where there may be small openings resembling infected, dilated ducts, small cysts filled with clear fluid, or a number of red polyps with narrow stalks and long flowing fronds. Often present near the sphincter and interfering with its action are tiny inflammatory polyps. If the inflammation in the posterior urethra has been present a long time, there may be cicatricial changes

causing sclerosis of the bladder neck or median bar formation such as that observed in bladder neck obstruction in men. Patients in whom such changes have taken place may have a dilated bladder with trabeculation and residual urine. In some cases the ureters and the renal pelves may be dilated as a result of back-pressure. Renal function studies and intravenous urograms to determine the status of the upper urinary tract should be made in most cases.

Local and constitutional therapy should be carried out. The urethra should be gradually dilated by treatments at weekly intervals until a No. 28 or No. 30 (French) sound will pass easily. The bladder should be irrigated with solutions of 1:10,000 potassium permanganate or 1:10,000 silver nitrate both for antisepsis and to stretch the bladder, for often the capacity has been reduced as a result of frequent urination. A soothing antiseptic solution such as 5 per cent Argyrol® or 1:8,000 acriflavine then may be introduced. If infection remains, the topical applications of 10 per cent to 20 per cent silver nitrate solution through an endoscope will prove helpful. For destruction of inflammatory cysts and polyps, light fulguration of the growths and of the entire posterior urethra with high frequency current has been found quite effective. In a few cases of long-standing inflammation where sclerosis of the bladder neck with median bar formation has occurred, causing less than complete emptying of the bladder at urination, transurethral resection of the obstructing tissue has been done, with good results. Microscopically examined, the tissue removed in such cases resembled that observed in chronic prostatitis.

The constitutional therapy involves putting the patient on a bland diet, forcing fluids, administering sedatives and antispasmodics such as Donnatal,® ordering hot sitz baths, and abating any existing adjacent or distant foci of infection in the cervix, vagina, teeth, tonsils, gallbladder or gastrointestinal tract. In a few cases in which the symptoms were not relieved by the measures described, proscribing certain foods or substances to which the patient was found to be sensitive, and administration of ephedrine or antihistamines, was beneficial. Any concomitant urinary tract infection should be treated with the appropriate sulfa drug or antibiotic agent.

Patients at or past the menopause may have atrophic menopausal urethritis, characterized by thinning and atrophy of the vaginal mucous membrane about the urethra with splotchy areas of reddening or petechiae extending into the vestibule. For such patients the local use of estrogenic hormones[6] with vaginal suppositories of stilbestrol, 0.1 mg. each, inserted nightly for three weeks, followed by a rest period of one week and then readministration if necessary, is often efficacious. Oral administration of small doses of an estrogen is helpful in some cases.

Stricture of the Urethra

Urethral stricture, which is pathologic diminution of the lumen or of the distensibility of the urethra, is a common condition in women of all ages. It may be congenital, and often in young girls is associated with partial stenosis of the meatus,[4] which should be corrected by meatotomy. For children with urethral stricture or obstruction at the neck of the bladder, early diagnosis and proper treatment is important lest irreversible changes occur in the upper urinary tract. In older women the causes are acute or chronic infection of the urethra (chiefly gonorrheal), and trauma in childbirth, in coitus, in rough instrumentation, or in operation. Senile strictures with induration of the entire canal tend to occur in elderly women.

The symptoms of stricture are variable and may be progressive—from frequency, to terminal dribbling, to hesitancy and weakness of the urinary stream with difficulty in emptying the bladder, to complete urinary retention. Often little girls with stricture complain of great frequency during the day, of straining to void, of intermittency of urination, and of enuresis. If infection occurs, as it may if there is chronic stricture, the primary symptoms may be those of pyelonephritis, with backache, pyuria, chills and fever. Many cases of recurrent pyelonephritis in children and also in adults are due to urethral stricture.

The diagnosis is made on the basis of a history of difficulty in urinating and of recurrent urinary tract infection, and results of examination of the urethra with a catheter, a sound and bougie à boule, and a cystoscope. Resistance to passage of a catheter or small sound will be noted and the urethra will seem to grip the instrument. The diameter of the urethra (normally about 8 mm. in adults) can be determined with a sound or bougie à boule. In urethroscopic examination, the urethral tissue will be observed as pale and cicatricial with loss of striae. There may also be congestion, desquamation, erosion or superficial granulation.

Treatment involves periodic dilatation of the urethra until the normal calibre is established, the use of antibiotics for infection, hot sitz baths, and eradication of foci of infection.

Urethral Caruncle

Urethral caruncle, a friable, sensitive vascular tumor situated on the floor of the urethral meatus, is very common in middle-aged and elderly women. It is usually attached by a single base and protrudes through the external orifice as a raspberry-like mass, which may be sessile but usually is freely movable and pedunculated. It is soft and bleeds easily upon manipulation. The patient complains of pain, exaggerated by movement and urination, and of a blood-stained discharge. Bleeding, which is usually spotty but may be heavy, is a prominent symptom. The blood is usually seen at the beginning or end of urination, or following coitus, friction from clothes or pads, or other trauma. Often caruncles are exquisitely sensitive and cause such distressing symptoms as to lead to neurasthenia, insomnia, loss of weight, despondency, melancholia

and other mental disturbances. On the other hand, in many cases there are no symptoms.

While the cause of caruncles is not definitely established, various investigators have inculpated congestion of the urethra, rupture of cysts of Skene's ducts, chronic irritation of the urethral mucosa and estrogen deficiency. Palmer, Emmett and MacDonald,[9] who studied 120 cases of urethral caruncle from the histopathologic and clinical aspects, concluded that caruncle is a partial localized prolapse of the urethral mucosa, associated with chronic inflammation. Begg[1] agreed and said that the chief cause of urethral prolapse is infection, present and past. The histological appearance of a caruncle is essentially that of chronically inflamed, proliferative mucosa; edema and vascular engorgement are prominent features. Caruncles are classified, according to the predominant histologic character, as granulomatous, papillomatous or angiomatous.

No treatment is necessary for small asymptomatic caruncles. For others, the best treatment, in the author's opinion, is that suggested by Walther:[12] After local anesthetization or the administration of Pentothal® intravenously, the urethra is stretched, the tumor is grasped with Allis forceps or traction suture and pulled forward to expose the base. It is cut across at the base with an electric cutting loop, and the base then is thoroughly fulgurated to prevent recurrence. Care must be taken not to fulgurate too much of the surrounding mucosa of the urethra lest stricture be caused. Topical application of silver nitrate solution is ineffective in the treatment of caruncle.

Many irritative urinary symptoms usually attributed to urethral caruncle, when such a lesion is present, are more often due to associated stricture of the urethra or chronic posterior urethritis. The author carries out a thorough examination of the urethra in all such cases in order to detect and correct pathological changes.

After a caruncle is removed, the patient should be examined frequently so that the urethra may be properly dilated and recurrence of the tumor, which is common, prevented. A microscopic study should be made of all caruncles to differentiate caruncle from malignant tumors of the female urethra such as carcinoma and sarcoma, which are fortunately infrequent.

Prolapse of the Urethra

Prolapse of the urethral mucosa may occur in infants and young girls but is most common in women past middle age. It may be partial but usually the entire circumference of the mucosa is involved. The chief predisposing cause is generally considered to be a weakness of the urethral wall, which may be congenital, the result of trauma such as is sustained during delivery, or the result of general weakness and debility. As precipitating causes, such factors as chronic cough, straining at stool, vesical tenesmus, calculi in the bladder, persistent diarrhea, and parturition must be considered. In the cases of two 9-year-old girls reported by Zeigerman and Kimbrough,[13] direct trauma—fall from a bicycle and a kick in the vulva—was the precipitating cause.

The lesion is a red, congested mass that protrudes several centimeters from the meatus and exudes a serosanguineous fluid. Occasionally infarction or strangulation occurs and the mass becomes ulcerated and necrotic. Symptoms may be slight but there is usually frequency, pain and burning on urination, difficulty in voiding, and bleeding, particularly if the mass is manipulated.

The method of treatment depends somewhat upon the cause and the extent of the prolapse. If the cause is an acute inflammatory process, reduction of the mass, the application of astringent compresses and removal of the cause of inflammation may be all that is required. In some cases a catheter may be inserted and left in place until the edema subsides.

In the author's experience, the most satisfactory treatment is to circumcise the redundant mucosa with high frequency current and fasten the cut edges to the vestibular margin of the vagina. Stellate fulguration with high frequency current or slow electrocoagulation with a flat electrode is also considered effective treatment.

Diverticulum of the Urethra

Diverticulum[8] of the urethra usually is manifest as a painful, fluctuating mass in the middle third of the urethrovaginal septum which communicates with the urethral canal. It usually causes frequency of urination, and discomfort during coitus or when the patient is sitting or walking. At the end of urination there is often a discharge of pus or cloudy urine. Formation of stones in the sac is rather common. In inspection and palpation of the ventral surface of the urethra, a pouch can be seen and felt. The contents, which can be expressed by palpation, are often purulent. The site of the orifice into the urethra can be ascertained by urethroscopic examination. For purposes of roentgenographic study, a radiopaque material can be introduced through a ureteral catheter coiled in the sac.

Diverticulum of the urethra is believed to be caused by developmental defect, by herniation of the urethral canal at a point weakened by trauma, or by rupture into the urethral canal of a retention cyst or an abscess of the urethral wall.

The most effective treatment is complete surgical removal of the pouch with closure of the defect in the urethra and urethral catheter drainage of the bladder for a week or ten days.

Congenital Valves

Congenital valves or bands of tissue in the posterior urethra are not as common in girls as in boys but must be considered in all cases of urinary difficulty in the young, particularly when there is evidence of renal insufficiency.

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REFERENCES

1. Begg, R. C.: There are no urethral caruncles, Lancet, 1:824, April 1951.

2. Bugbee, H. G.: Frequency of urination in women, J.A.M.A., 68:693-695, 1917.

3. Burns, E.: Diagnosis and treatment of minor lesions of the urethra and bladder in women, Nebraska Medical Journal, 35:246-252, Aug. 1950.

4. Campbell, M. F.: Stricture of urethra in children, J. Pediat., 35:169-179, Aug. 1949.

5. Deter, R. L., Caldwell, G. T., and Folsom, A. I.: A clinical and pathological study of the posterior female urethra, J. Urology, 55:651-662, June 1946.

6. Howard, F. S.: Estrogen treatment of chronic urethritis in the female, Calif. Med., 66:1-6, June 1947.

7. Hunner, G. L.: Chronic urethritis and chronic ureteritis caused by tonsillitis, J.A.M.A., 56:937-941, June 1911.

8. Menville, J. S., and Mitchell, J. D., Jr.: Diverticula of the female urethra, J. Urology, 51:411-423, April 1944.

9. Palmer, J. K., Emmett, J. L., and MacDonald, J. R.: Urethral caruncle, Surg., Gynec. and Obst., 87:611-620, Nov. 1948.

10. Roen, P. R., and Stept, R. R.: Urethritis in girls, Am. J. Dis. Child., 72:529-535, Nov. 1946.

11. Stevens, W. E.: The female urethra: in Practice of Surgery (Lewis) 9: Ch. 25, Hagerstown, Md., 1948, W. F. Prior Co., Inc.

12. Walther, H. W. E.: Caruncle of the urethra in the female with special reference to the importance of histological examination in the differential diagnosis, J. Urology, 50:380-388, Sept. 1943.

13. Zeigerman, J. H., and Kimbrough, R. A.: Circular prolapse of the urethra, Am. J. Obst. and Gynec., 56:950-954, Nov. 1948.

Newer Concepts of Anatomy of the Lungs

Advantages to Surgeons, Internists, Bronchoscopists and Radiologists

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SUMMARY

In the newer concept of the anatomical divisions of the lungs, the bronchopulmonary segment is the primary unit. Specific lung areas are identified by their relationship to the branch of the bronchus that serves them. The left upper lobe apical segment, for example, is that which is supplied by the left upper lobe apical bronchus. The boundaries of the segments are definitive; thin tissue surrounds each segment.

Some diseases of the lungs tend to progress only "through channels"—reaching a segment via the specific airway serving it, and then frequently remaining within the segmental boundaries.

The concept is of particular importance to surgeons because of the trend toward segmental resection and salvage of vital lung tissue. In addition, a more definitive nomenclature, useful to surgeons, internists, radiologists and bronchoscopists in designating the location of a lesion or a foreign body, is possible.

THE recent rapid advances made by thoracic surgeons upon problems relating to segmental pulmonary operations have virtually forced the entire medical profession, including clinical anatomists, to take stock of the present knowledge of anatomy of the lungs. Despite the great forward strides in the direction of more accurate diagnosis and surgical treatment of thoracic lesions during the past decade, it was not until the period immediately following World War II that the present newer concepts of pulmonary segmental anatomy began to be formulated. Owing primarily to the investigations and writings of Huber, Churchill, and the Macklins, and, in addition, to the incessant demand of surgeons, great interest has been taken in the field of pulmonary anatomy and revolutionary changes have been wrought. The fundamental concept, which is responsible for the pronounced change in ideas on pulmonary structure, is, in Huber's words, that "the lung in its ultimate analysis is the complete and total branching of the bronchus leading to the lung."

This new idea of the predominance of the bronchus and of its major branches immediately challenges the position of the lobe as the primary anatomical unit and brings to the fore the bronchopulmonary segment as the functional pulmonary unit. In order to visualize properly the lung from the point of view of its divisions into bronchopulmonary segments, it is necessary first to modify, if not abandon, the usual concept of a tri-lobed right lung and a bi-lobed left lung. This concept of lobar divisions is based, anatomically, solely upon the presence of the surface fissures, which are but suppositious indications of the fundamental underlying structure. Instead, in order to reorient thinking to the bronchopulmonary plane, physicians must train themselves to visualize the anatomy of the main stem right and left bronchi and their major branches.

Physicians who are unaware of the basis for bronchopulmonary segmental anatomy should take note of the experimental work in which it was observed that the injection of colored gelatin or air into the bronchial subdivision in question filled only the bronchopulmonary division served. Injection very satisfactorily delineates the boundaries of these divisions. Furthermore, with careful technique it is possible to dissect out the thin connective tissue planes between the various bronchopulmonary segments. Finally it is a commonly known anatomical fact that the normal as well as the accessory pulmonary fissures lie in the planes between the bronchopulmonary subdivisions.

The branching of the main stem bronchi and their development into the bronchopulmonary segments may be observed by starting at the main stem bronchus just below the tracheal bifurcation and following the entire bronchial course. The right main stem bronchus has three main branches, one each for the upper, the middle and the lower lobe. The branch for the lower lobe is actually a continuation of the main stem bronchus inferiorly into the lower lobe. The right upper lobe bronchus subdivides into three distinct branches to establish the apical, the subapical, and the pectoral divisions of the lobe. The bronchus to the right middle lobe divides into two branches, one for the lateral middle and one for the medial middle segments. It should be noted that the two divisions of the right medial lobe lie in a plane lateral and medial to one another; it is in this area only that a fundamental distinction exists between the right and left lungs. The continuation of the right main stem bronchus into the lower lobe gives off an upper branch to the apical segment of this lobe. The remainder of the bronchus subdivides into branches, one each to the anterior, middle and posterior basal portions of the lobe, and another to the cardiac segment of the lower lobe.

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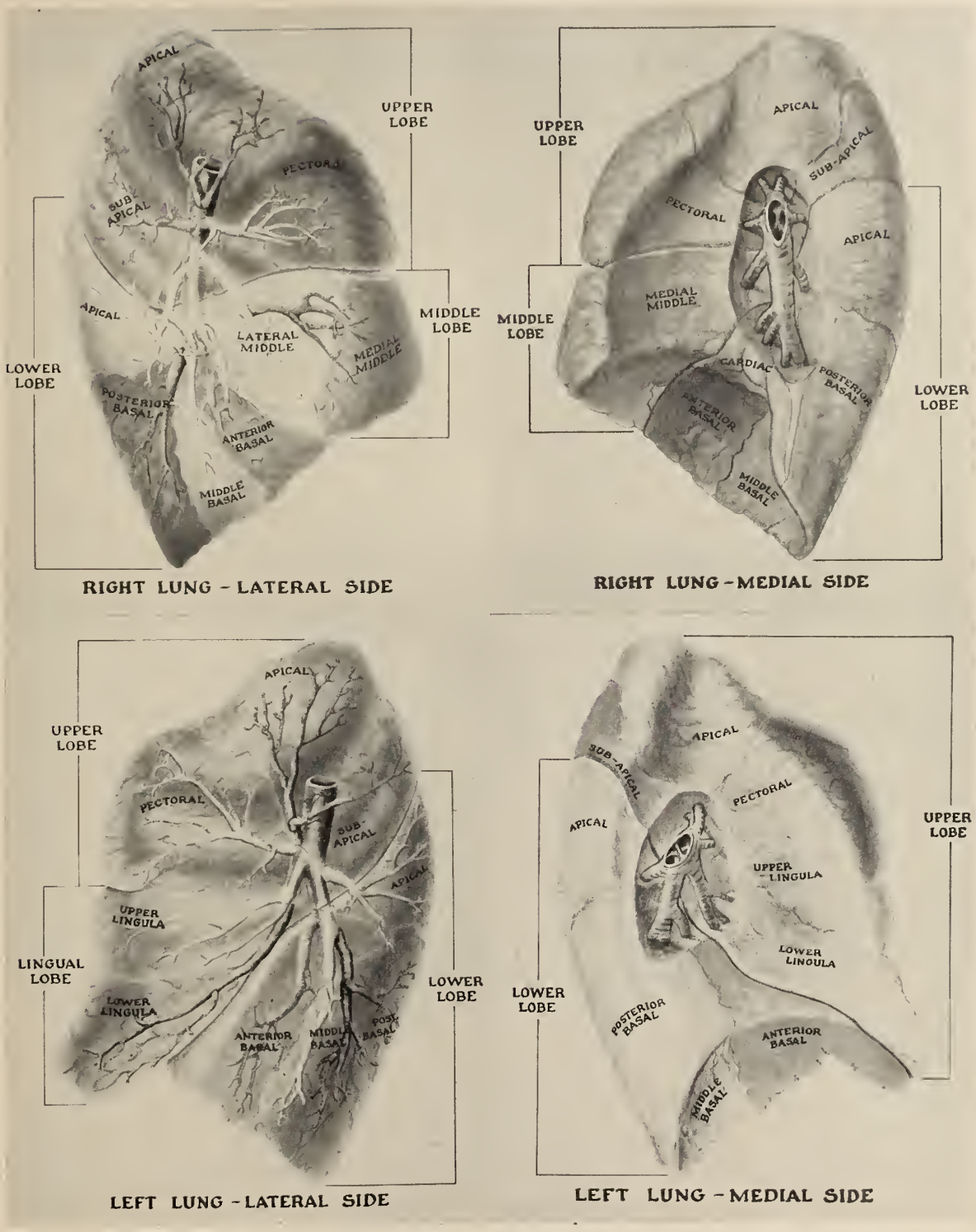

In following the course of the main stem bronchus of the left lung, it will be noted that the main branch to the left upper lobe subdivides into two branches. One of these goes to the portion of the left upper lobe corresponding to the right upper lobe. The other branch is for the lingula, or that portion of the left upper lobe which corresponds to and is the homologue of the right middle lobe. The upper of these branches has three main divisions establishing the pectoral, the apical, and the subapical segments. The lower branch divides into two branches, one to the upper and the other to the lower lingula. Thus, the two segments of the lingula lie superior and inferior, one to the other, unlike the segments

of the right middle lobe which occupy medial and lateral positions. The main continuation of the bronchus to the left lower lobe breaks up into branches like those on the right, which run to the apical, the posterior, the middle, and the anterior basal lobes.

It would be well to have a nomenclature that would indicate the relationship between the segment of the lobe in question and the branch of the bronchus supplying it. This would considerably diminish the number of anatomical terms and make for easier understanding of the relationship and the locale of the segment and the bronchus referred to. It would be convenient to say, for example, that the left upper lobe apical segment is supplied by the left upper lobe apical bronchus; the bronchus would derive its name from the bronchopulmonary segment it serves and the bronchopulmonary segment would derive its name from its position in the lung as the lung is viewed from a medial or a lateral plane. In like manner, the left lower lingula bronchus would be known to supply the left lower lingula segment. With such a nomenclature, such confusing terms as epiarterial bronchus, cardiac stem bronchus, hyparterial bronchus, and others, would be avoided.

It is true that there is considerable variation of the pattern of the bronchopulmonary segments as outlined in preceding paragraphs. However, these deviations are no greater than those which occur in any other well delineated and pictorialized anatomical areas, as, for instance, in the arterial supply to the stomach or in the venous return from the scalp and face. Certainly the largest structures, the major bronchi and their major branches, deviate very little from charted pattern either as to the site of division or the number of divisions.

(It is noteworthy that there is a higher degree of constancy of pattern in all the main branches of both the right and left upper bronchi than there is in the lower lobe bronchi, particularly that group of lower lobe bronchial branches running to the anterior, the middle and the posterior basal segments.)

Obviously this newer concept of pulmonary anatomy is of clinical importance to internists, to bronchoscopists, and to surgeons who are called upon to resect pulmonary segments. Radiologists already have profited in many instances from this new concept, for it is helpful in stating the location of spots or areas of disease. A report that there is indication of pathologic change in a specific bronchopulmonary segment or perhaps in adjoining segments is certainly more accurate than reports written in the older lobar terms could be. It is possible, for example, to give the location of atelectatic areas by the bronchopulmonary segment in which they occur, which in a large number of cases will be the full extent of the lesion. This is true also of the newer groups of viral pneumonia, in which the lesions, although spotty and scattered, tend to stay within bronchopulmonary segments. In addition, when a radiologist attempts to define for a bronchoscopist the location of a foreign body, he can do so more readily and accurately.

To bronchoscopists, the concept of bronchopulmonary segmentation and the more precise nomenclature are of further value. It is possible to state with almost complete accuracy the location of purulent lesions or of neoplastic tissue, as determined by the aspiration of pus or cellular secretion from the smaller bronchus in question.

With the surgical trend increasingly toward segmental pulmonary resection when possible, knowledge of the bronchopulmonary segments becomes imperative. The consequent saving of normal lung tissue, with attendant preservation of more nearly normal aeration and respiratory and mediastinal movement, is an outstanding surgical advance.

Another facet of the importance of the bronchopulmonary concept concerns the known predilection of various pathological processes for a specific bronchopulmonary area or areas. Tuberculosis favors the upper apical segment. Abscess is frequently observed in the apical and pectoral segments of the upper lobe and also in the posterior basal segment of the lower lobe. Bronchiectasis often involves the lower lobe on one or both sides, and in addition the neighboring part of the right middle lobe or the lingula division of the left upper lobe. Knowing what disease is most likely to occur in a given segment is useful in differential diagnosis.

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Some Relationships Between Heart Attacks and Paralytic Strokes

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SUMMARY

When a patient suddenly collapses and loses consciousness, it is reasonable to assume that both the heart and the brain are acutely disordered. In as many as one case in three in which permanent paralysis occurs, cerebral softening rather than hemorrhage is observed at autopsy. Because there is no proof that in the early stages of stroke the changes are irreversible, and because in a significant proportion of cases the heart is simultaneously injured, both stellate ganglion block and anticoagulant therapy seem justified.

About a hundred years ago Stokes[11] was collecting and publishing observations on cases of slow pulse. He described what were then called apoplectic, pseudo-apoplectic or syncopal attacks, in which patients suddenly lost consciousness and almost always recovered fairly rapidly and without residual paralysis. He wrote: "The opinion that the apoplectic seizures are owing to deficient arterial supply seems the most tenable. The suddenness of the attack, and, in many instances, the rapidity of the recovery, are in favor of this view."

Hemiplegia with cerebral softening, due to spontaneous or induced bradycardia, has been reported. In one of the cases collected by Stokes, extensive softening of the brain, especially the left cerebral hemisphere, and pathological changes in the heart and aorta, were noted at autopsy. Steegmann and Feil[10] reported two cases of hemiplegia. One patient had auriculoventricular rhythm, with a rate of 32 per minute, and the other had complete auriculoventricular block with a ventricular rate as low as 20 per minute when the pulse was barely perceptible. Steegmann and Feil did not believe that the lesions could be caused by generalized slowing or stoppage of the flow of blood. However, in the second of the two cases, in which death occurred more than a year after the stroke, no arterial occlusion or source of embolism was observed at autopsy.

New possibilities for therapy in cases of cerebral vascular accident provide an incentive for closer analysis of the pathogenesis of cerebral lesions accompanying apoplexy. If there is such a thing as a paralytic stroke that is not necessarily due to hemorrhage, embolism or thrombosis, and in which there is strong tendency toward spontaneous recovery, the fact should be worth recognition.

Of all the cases of cerebral vascular accident, the most dramatic are those in which sudden loss of consciousness occurs. This is not, in all cases, due to hemorrhage. Aring and Merritt[2] noted, in a study of 245 cases, that while coma developed early in 51 per cent of cases of hemorrhage, it also was an early symptom in 32 per cent of cases of thrombosis. Cadwalader[1] observed that in 35 cases of cerebral vascular accident, each of which began with sudden profound loss of consciousness, hemorrhage occurred in 24 and softening in 11.

It should be borne in mind that it is common practice to use the term *thrombosis* rather loosely when it is known only that the lesion in question is an infarct. The term is also commonly applied in cases of infarction of the heart, which are diagnosed as coronary thrombosis although it is known that thrombosis is not essential to myocardial infarction. With this reservation in mind it can be said, on the basis of the statistics just cited, that in as many as one of three cases of infarction of the brain sudden loss of consciousness occurs, and that in the 35 cases of paralytic stroke with sudden loss of consciousness, approximately one in three was caused by cerebral infarction rather than hemorrhage.

In cases of paralytic stroke the presence of a gross lesion of the brain, suspected or verified, may influence one to attribute all the associated symptoms, including loss of consciousness, to the gross lesion. This attitude results from the deep impression made by the first discovery of hemorrhage, thrombosis and embolism in cases of apoplexy. It has only recently been recognized that unconsciousness occurs only in the presence of the following conditions: (1) a lesion of the midbrain, (2) a neighboring or distant intracranial lesion which indirectly disturbs the midbrain, or (3) a generalized depression of function of the cerebrum and brain stem due to circulatory, metabolic or neurotrophic disturbance. Unconsciousness of the kind caused by the third condition mentioned is, when transitory, equivalent to syncope.

COINCIDENCE OF STROKE AND CARDIOVASCULAR INSUFFICIENCY

Investigation has shown quite conclusively that there is a close relationship not only between cerebral vascular disease and cardiovascular disease in general but also between acute myocardial infarction and acute cerebral vascular accident in particular.

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Wilson and co-workers[13] recently published observations in a series of 542 cases of acute cerebral vascular accident in which autopsy was carried out in the Laboratory of Neuropathology at the Philadelphia General Hospital. In 361 (66 per cent) of these cases there was either clinical or postmortem evidence of cardiovascular insufficiency at the time of the stroke. In 75 cases an acute cardiac catastrophe was associated with the stroke—acute myocardial infarction in 55, mural thrombus or thrombosis of the cardiac atrium in 12, thrombosis of the aorta or mesenteric arteries in three and rupture of aortic aneurysm in three.

Race and Lisa[7] reported that in 100 consecutive autopsies in which acute myocardial infarction or an acute cerebral vascular accident was observed, both lesions were present in 15 cases. It has been recognized and generally accepted that emotional excitement predisposes both to heart attacks and to paralytic strokes. In this connection, some facts bearing on the controversial subject of cerebral vascular spasm deserve mention. According to Schmidt,[9] constriction is the natural tendency of cerebral blood vessels, when not acted upon by intravascular pressure or chemical vasodilator influences. Carbon dioxide is the best vasodilator of the brain, and acapnea is a potent cause of cerebral vasoconstriction. Thompson[12] observed that in some emotionally excited patients anginal pain accompanied by inversion of T waves or ST segment depression with pronounced lowering of T waves in the electrocardiogram is associated with hyperventilation. Thompson cited Barach who noted that under certain conditions carbon dioxide protected against constriction of the coronary vessels with coronary insufficiency, as observed electrocardiographically.

It is interesting to note that in one patient at the Los Angeles County Hospital for treatment of heart block, asystole was readily induced by voluntary hyperventilation. Syncope with electroencephalographic changes likewise occurred, but the patient recovered from the hazardous experiment without any evident residual effects. It seems likely, however, that emotional discharges can cause simultaneous depression of cardiac and cerebral function, and can give rise to permanent residual effects in the heart and the brain, even though the subject may go through many crises without any permanent ill effect. Engel,[5] discussing syncope in relation to heart disease, made the following comments: "Physicians and patients commonly associate fainting with heart trouble, but most patients who faint do not have heart disease and of those who do, relatively few faint. On the other hand, since heart disease is the most common cause of sudden death, perhaps it would be more correct to say that fainting with heart disease actually is common, but the first attack is usually fatal. Indeed, most of the patients with heart disease who faint eventually die during such an experience."

While Stokes[11] spoke of the apoplexy associated with bradycardia as "non-paralytic," in a sense this is not true. The patient in a syncopal attack is not only unconscious; he is also totally paralyzed so far as any voluntary muscular activity is concerned. The paralysis is, however, usually transient and on recovery nothing in the nature of hemiplegia is observed. In some cases recovery is delayed, and in some of these cases there is a stage at which hemiparesis is observed; but it disappears after a short time. In such cases an inaccurate diagnosis of "transient thrombosis" is sometimes made. If the hemiparesis or hemiplegia following a syncopal attack does not disappear, it is usually assumed that hemorrhage, thrombosis or embolism has occurred, but the concept that generalized failure of circulation to the brain or to the heart can result in focal infarction is a natural conclusion from the foregoing observations. To some extent treatment may avert irreversible changes—hemorrhage, thrombosis or embolism.

As Stokes[11] said, the rapidity of recovery in many instances of syncope with severe heart disease is in favor of the view that the loss of consciousness results from deficient arterial supply to the brain. The object of treatment in cases in which recovery is delayed or imperfect is to encourage return of circulation, and to prevent irreversible changes, particularly thrombosis.

STELLATE GANGLION BLOCK

The effect of stellate ganglion block and anticoagulant therapy, advocated by Aring[3] and others, is a controversial subject. What is still lacking is sufficient controlled study. The good results reported by Amyes and Perry[1] are instructive but not conclusive without a control group. Ruben[8] reported that the death rate in patients admitted to the neurology wards of the Philadelphia General Hospital before stellate ganglion block was used in 100 unselected cases was 82 per cent. In the treated series the death rate was 35 per cent. In a given month when this therapy was given in alternate cases the death rate in the treated group was 44 per cent as compared with 76 per cent in the cases in which stellate ganglion block was not used. Belief that acute cerebral vascular accidents are quite likely to be associated with acute myocardial infarctions would seem to make logical the practice suggested by Aring,[3] namely, employing both cervical sympathetic blocks and anticoagulants in non-hemorrhagic cases, for thrombosis is the most important irreversible complication of infarction of the brain as well as of the heart. Perry and Amyes[6] reported an interesting experience which indicated that stellate ganglion block may benefit the heart and the brain simultaneously. A 65-year-old patient had relief of pectoral pain and of motor aphasia within 10 to 20 minutes after infiltration of the cervical sympathetic trunk with procaine.

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REFERENCES

1. Amyes, E. W., and Perry, S. M.: Stellate ganglion block in the treatment of acute cerebral thrombosis and embolism, J.A.M.A., 143:15-20, Jan. 7, 1950.

2. Aring, C. D., and Merritt, H. H.: Differential diagnosis between cerebral hemorrhage and cerebral thrombosis. A clinical and pathologic study of 245 cases, Arch. Int. Med., 56:435-456, Sept. 1935.

3. Aring, C. D.: The early treatment of stroke, Cincinnati J. Med., 30:304-309, June 1949.

4. Cadwalader, W. B.: A comparison of the onset and character of the apoplexy caused by cerebral hemorrhage and by vascular occlusion, J.A.M.A., 62:1385-1389, May 2, 1914.

5. Engel, G. L.: Fainting. Physiological and Psychological Considerations, Springfield, C. C. Thomas, 1950.

6. Perry, S. M., and Amyes, E. W.: Stellate block for the relief of simultaneous angina pectoris and motor aphasia, California Med., 71:422-423, Dec. 1949.

7. Race, G. A., and Lisa, J. R.: Combined acute vascular lesions of the brain and heart, Am. J. M. Sc., 210:732-737, Dec. 1943.

8. Ruben, J. E.: Results of stellate ganglion block therapy for cerebro-vascular accident, J. Philadelphia Gen. Hosp., 1:110-115, Oct. 1950.

9. Schmidt, C. F.: The Cerebral Circulation in Health and Disease, Springfield, C. C. Thomas, 1950.

10. Steegmann, A. T., and Feil, H.: Hemiplegia following bradycardia and cardiac standstill, Am. Heart J., 25:244-230, Feb. 1943.

11. Stokes, W.: Observations on some cases of permanently slow pulse, Dublin Quart. J. M. Sc., 2:73-85, 1846. Reprinted in M. Classics 3:727-738, March 1939.

12. Thompson, W. P.: Electrocardiograph in hyperventilation syndrome, Am. Heart. J., 25:372-390, March 1943.

13. Wilson, G., Rupp, C., Jr., Riggs, H. E., and Wilson, W. W.: Factors influencing the development of cerebral vascular accidents. I. Role of cardiocirculatory insufficiency, J.A.M.A., 145:1227-1229, April 21, 1951.

Changing Epidemiologic Aspects of Typhoid Fever in California

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SUMMARY

Typhoid fever in California is no longer a major public health problem. The previously high incidence of water- and milk-borne infections has been greatly reduced. Human carriers now are the source of most infections.

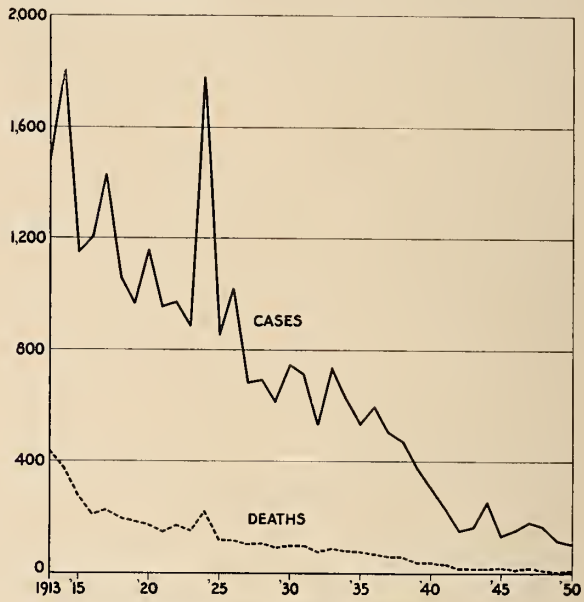
Chloramphenicol has proven to be a valuable aid in the therapy of the acutely ill patient, but it has not as yet solved the therapeutic or public health problems of typhoid fever. It continues to be vital for the protection of the public that every suspected case of typhoid fever be definitely established by appropriate public health laboratory procedures, that thorough investigation be carried out to determine the source of infection, and that careful follow-up examinations be done so that if a carrier state develops, proper measures can be taken.

EPIDEMIOLOGICALLY, typhoid fever in California has undergone almost as many changes as the scientific name of the causative agent. There has been a gradual shift from endemic prevalence with sizable outbreaks to sporadic cases or occasional small outbreaks. Water and milk have become of lesser importance as a source of infection and the individual carrier has become increasingly important. These evolutions have taken place over a period of years and reflect the progress made in sanitation, laboratory procedures, investigative techniques, and education.

Just what has happened in the incidence of typhoid fever in California since 1913 is traced in Chart 1. From a high of 1,805 cases with 436 deaths in 1914 there has been a steady decline except for the celebrated water and milk epidemic of Santa Ana in 1925. With this decreasing incidence, typhoid fever is becoming a medical curiosity and is seldom considered in the initial clinical examination of a febrile patient.

The only records available on the prevalence of this disease before 1913 appear in the comments made in the annual reports of the State Board of Health. These reports consistently note that the usual 500 deaths from typhoid fever occurred each year. It is interesting to note that these early reports constantly referred to the pollution of water by human excreta, the dangers of milk and the lack of public education in these matters. Yet as late as 1932 pollution of river waters continued to be a major source of typhoid fever.

Chart 1.—Typhoid Fever, Reported Cases and Deaths—California, 1913-1950.



NOTE: 1919 DEATHS INCLUDE DEATHS FROM PARATYPHOID FEVER

Water-borne Typhoid Fever

The problem of river pollution started with the pioneers who preferred to establish settlements near a river or a stream. As the towns grew, the waterways gradually became the source of drinking water as well as repositories for sewage. As a result, the nearer the town was to the mouth of the river, the greater the chance for a polluted water supply.

In the delta region of the Sacramento and San Joaquin rivers there was excellent example of this effect on the incidence of typhoid fever. In the four-year period from 1924 to 1929, over 300 cases of typhoid fever originated in this area. In 1930 a program directed at improvement of the water supply, at camp and agricultural sanitation, and at immunization resulted in the virtual disappearance of typhoid fever from this region.

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Water-borne outbreaks in urban areas have become rare if not extinct. The improvement of water supplies and sewage disposal systems leaves only the possibility of mechanical breakdown, accidental or intentional, to produce an outbreak from these sources in those areas.

Less progress has been made in the rural areas. Untreated water from polluted or potentially polluted streams is still being used for domestic purposes. Wells are not always properly constructed and frequently are situated with complete disregard of a nearby cesspool or privy. Small outbreaks from these sources are still occurring.

Milk-borne Typhoid Fever

Before pasteurization was accepted, before regulations requiring sterilization of utensils were adopted and before general control measures were instituted, milk was a major source of typhoid infections.

Several outbreaks resulting from contaminated milk are on record. Some were traced to a carrier working in a dairy, and some were traced to the simple fact that utensils were rinsed in a nearby ditch which served as a sewer outlet.

Such occurrences are no longer usual but the possibility still remains. Sixty-three cases of typhoid fever were reported from an urban area not so many years ago. The only common factor was a pasteurized milk supply. In investigation of the dairy plant, no defects in pasteurization were noted, but two employees were found to be carriers. One had little or no contact with the milk. The other worked on the bottling and capping machine. When the amount of pasteurized milk to be bottled and capped reached a low level this machine did not function. The carrier, therefore, manually filled and capped (and contaminated) the last six or seven bottles of each batch of pasteurized milk.

Dairy products or foods containing dairy products are more frequently implicated now than is milk itself, and outbreaks from such sources are usually traced to a carrier who worked in the preparation of such products.

Carriers

With the reduction in water-borne and milk-borne epidemics, the carrier has become the most important source of infection. Present-day outbreaks usually concern family groups or groups of persons with a common interest—the classic church supper, for example. Frequently the carrier is the cook, or a grandmother or, more recently, a relative who has been admitted to this country as a displaced person.

Tracing the infection to its source, to the carrier, has been made much easier and more accurate by phage typing. This test, which identifies the specific type of typhoid bacillus, is an invaluable aid to the investigator. A few months ago the State Department of Public Health received reports from three widely separated counties of six cases of typhoid fever, all caused by Phage Type C organisms. This coincidence, along with the dates of onset, indicated a possible common source. Investigation revealed that all of the patients had vacationed at the same resort where the water supply was from a well located alongside and downhill from the cesspool. A previously unknown carrier with Type C organisms had been at the resort at the same time as the persons who became ill, and had been having bouts of diarrhea at that time.

TABLE 1.—*Cases of Typhoid Fever with Known Source and Mode of Transmission for Selected Years*

	1920-1925		1940-1945	
	Cases	Per Cent	Cases	Per Cent
Water	713	60.0	13	7.0
Milk	464	39.0	8	5.0
Carrier	11	1.0	151	88.0
Total	1188		172	

During another investigation of a series of cases all patients were found to have Type C infection, except one child who had Type E. In further investigation the grandparents of this child were found to be carriers of Type E organisms.

Discussion of Epidemiology

In Table 1, the great changes in epidemiologic factors since 1920 are noted. The years 1920 to 1925 were selected as being representative of the earlier years and 1940 to 1945 for the more recent years. Only those cases for which the source is known are included.

In California all known carriers are registered and certain restrictions are placed on them regarding food handling and hygienic habits. Of the total 589 carriers registered, 422 are now on the active list, the remaining 167 have died, have moved out of the state or have been released. This list represents only the known carriers. The major reservoir of endemic typhoid fever in California might well be persons who have had this disease and who are not aware of their carrier state, are not registered with their local health officer, and are not under supervision or treatment. This underlines the importance of careful follow-up of every known case, regardless of the mode of treatment, as noted below.

Chloramphenicol in Typhoid Fever

At this time, chloramphenicol is the only one of the newer therapeutic agents to show promise in the treatment of typhoid fever.[13] Its effectiveness has not as yet been completely evaluated and the possibility that its use in the treatment of acute cases may increase the number of carriers has become a matter of interesting conjecture.

From a bacteriological point of view, chloramphenicol has not proven to be efficient. *S. typhosa* has been cultured from the blood and feces from several patients both while under treatment and following the discontinuance of therapy.[2, 4, 6] Since the majority of cases appearing in the literature are reported at the time of clinical release, the bacteriological follow-up has not been sufficient to determine the effect of this drug in establishing the carrier state. Furthermore, attempts to cure the chronic carrier state have been for the most part unsuccessful.[2, 11, 12]

From the clinical point of view chloramphenicol has not solved the therapy of typhoid fever. That it

gives symptomatic relief in acutely ill patients has been generally accepted.[5, 8, 9, 13] Therapeutic response is not immediate. Alleviation of toxemia does not occur until 36 to 48 hours after the drug is given, and elimination of fever takes about four days under the present regimen of chloramphenicol therapy.[1, 13] Relapses still occur and, indeed, there is some evidence that they may be more frequent.[3, 4, 6, 7, 11] However, whether or not these effects are a matter of dosage, timing or adjuvant therapy remains to be settled.[7, 9, 12, 13]

In view of the failure of chloramphenicol to completely prevent bacteriological and clinical relapses, the public health worker is concerned with the effect this drug may have on the carrier state. The evidence to support or reject this potential problem remains insufficient for firm conclusions. Douglas,[3] Good and MacKenzie[6] in England and Collins and Finland[2] in this country have noted the development of the carrier state in a few patients following chloramphenicol therapy. A series of cultures taken over a period of one year following recovery will be necessary before this question can be answered, and it is expected that the literature will be forthcoming from the many studies now in progress.

REFERENCES

1. Birdsong, McL., Mitchell, J. E., and Waddell, W. W., Jr., Typhoid and paratyphoid fever: A review of four cases treated with Chloromycetin. J. Ped., 36:310-315, March 1950.

2. Collins, H. S. and Finland, M., Treatment of typhoid fever with Chloromycetin. New Eng. J. Med. 241:556-561, Oct. 13, 1949.

3. Douglas, A. D. M., Typhoid fever treated with chloramphenicol. Lancet. 13: 6:858-859, May 6, 1950.

4. El Ramli, A. H., Chloramphenicol in typhoid fever. Lancet 13:618-620, April 1, 1950.

5. Erickson, G. W., Treatment of typhoid fever with Chloromycetin. New Eng. J. Med., 242:177-178, Feb. 2, 1950.

6. Good, R. A. and MacKenzie, R. D., Chloramphenicol in typhoid fever. Lancet 13:611-615, April 1, 1950.

7. Rankin, A. L. K. and Grimble, A. S., Treatment of typhoid fever with chloramphenicol. Lancet 13:615-618, April 1, 1950.

8. Rosove, L., Chudnoff, J. S., and Bower, A. G., Chloramphenicol in the treatment of typhoid fever. Calif. Med., 72:425-430, June 1950.

9. Smadel, J. E., Ley, H. L., and Diercks, F. H., Treatment of typhoid fever. I. Combined therapy with Cortisone and Chloramphenicol. Ann. Int. Med., 34:1-9, Jan. 1951.

10. Smadel, J. E., Woodward, T. E. and Bailey, C. A., Relation of relapses in typhoid to duration of chloramphenicol therapy. J.A.M.A., 141:129-130, Sept. 10, 1949.

11. Stryker, H. B., Jr., Failure of chloramphenicol in a chronic typhoid carrier. New Eng. J. Med., 242:782-783, May 18, 1950.

12. Woodward, T. E., Hall, H. E., Dias-Rivera, R., Hightower, J. A., Martinez, E. and Parker, R. T., Treatment of typhoid fever. II. Control of clinical manifestations with cortisone. Ann. Int. Med., 34:10-20, Jan. 1951.

13. Woodward, T. E., Smadel, J. E., Ley, H. L., Jr., Green, R. and Mankekar, D. S., Preliminary report on the beneficial effect of chloromycetin in the treatment of typhoid fever. Ann. Int. Med., 29:131-134, July 1948.

Complications of Tattooing

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SUMMARY

Pathologic consequence of tattooing is relatively rare, but in light of the great number of persons in military service, where tattooing seems to be popular, consideration of the complications seems worth while.

Four unusual cases of patients with cutaneous lesions in tattoos are reported. One patient had Boeck's sarcoid, in which the cutaneous eruption was limited solely to the tattooed areas on the body and involved all the various colors of the tattoo. The cutaneous eruption was only a single manifestation of generalized sarcoidosis.

Another patient had secondary syphilis with the cutaneous lesions involving multicolored tattoos, including the red areas. These tattoos were applied in Hawaii, and presumably the red dye was not the usual cinnabar (mercuric sulfide). As a general rule, the cutaneous lesions of secondary syphilis do not involve the red areas because of the treponomicidal action of mercuric sulfide.

In the third case the characteristic eruption of discoid lupus erythematosus was present. It began over the red areas of a tattoo on the patient's forearm. It has been stated that mercuric sulfide is a photo-sensitizing agent, and it is believed that this explains the localization of the eruption in this case.

The fourth patient had eruption, caused by mercury sensitivity, in an area of tattoo. The eruption was noted soon after the tattooing was done, and it persisted for seven years.

APPARENTLY many a wearer of a military uniform considers it so drab that he seeks cutaneous adornment to complement it. At any rate, a fair percentage of soldiers, sailors and marines acquire tattoos. Many tattooed soldiers, when questioned, indicated that they were persuaded to the epidermal artwork during a period of alcoholic ingestion. Strangely, most of the men questioned were proud of their tattoos and did not wish to have them removed. However, whatever the psychologic aspects of tattooing, because of the accelerated frequency of war—and concomitantly a probable increase in this form of adornment—it behooves dermatologists to review the pathologic complications that may arise from it.

No one knows exactly when or where tattooing was started, but in examination of Egyptian mummies of 1,300 B.C. blue tattoo marks beneath the skin were noted. Originally, tattooing consisted of multiple punctures of the skin in the pattern desired, with subsequent rubbing in of coloring matter so that the pattern would be indelibly fixed. In China, Borneo, India, and other parts of the Far East, tattooing has been prevalent, and from there tattooing was introduced into the European countries, chiefly by sailors.[2]

Nowadays tattooing is done with an instrument which consists of four or five needles in a row attached to an electric vibrator. The skin is shaved, washed with alcohol, and dried. Then a stencil pattern, dusted with fingerprint powder, is laid upon the skin as guide for piercing with the needles. After the pattern is removed, pigment, usually two to four colors, is implanted in the skin.

Many different kinds of pigments or dyes are used to produce the various colors in tattoos. The red color of the tattoo is usually produced by cinnabar (mercuric sulfide), but cadmium selenide (cadmium red) and sienna (ferric hydrate) also are used. The green color is produced by salts of chromium, such as chromium oxide, chromium sesquioxide, and hydrated chromium sesquioxide. Occasionally pthalocyanine dyes which contain copper salts, and sometimes coal tar dyes, are used to produce varying shades of green. Blue is cobaltous aluminate which is also known as azure blue and cobalt ultramarine. Black is finely dispersed carbon in an ammoniacal solution with phenol or occasionally iron oxide or extract of logwood used in substitution. Brown is a natural ferric hydrate and basic ferric sulfate; and for white, titanium oxide or zinc oxide is used. Yellow is produced by cadmium sulfide. Violet is a manganese salt called manganese violet, and flesh colors are produced by iron oxides of varying shades.[4]

The reactions observed in tattoos and the diseases directly attributable to the tattooing, fall into four general groups:

Group 1. Immediate response of the skin to the tattoo. This is a benign inflammatory response which is rarely accompanied or followed by secondary infection.[3] However, in rare instances keloid formation,[1] melanoma,[5] severe pyogenic infections leading to amputation and gangrene, and even death. have been reported as a direct consequence of the tattooing.[6]

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Group 2. Sensitization or allergic reactions to the pigments used in tattooing can appear immediately following the tattooing process or at any time during the existence of the tattoo. The sensitization dermatitis may be confined entirely to the tattoo or may become generalized. The majority of the sensitization reactions are to the mercury ordinarily used in the red portion of the tattoo.[3] The mercurial compound causing the dermatitis is not always the cinnabar in the tattoo but may be in the form of any mercurial compound which is used on the skin or internally. Application of ammoniated mercury ointment or mercurial antiseptics to the skin, or the ingestion of mercurial compounds, can cause a localized sensitization eruption in the red areas of tattoos. Allergic reaction to the green coloring material in tattoos has been reported.[3]

Group 3. Local or systemic infections can be inoculated into the skin at the time of the tattooing. The manifestations of the disease injected may appear either immediately after the tattoo has been applied or some time later, depending on the incubation period of the disease. Infectious hepatitis,[8] leprosy, tuberculosis, syphilis, tetanus, erysipelas, and chancroid[3] have all been reported to have been contracted in this manner.

Group 4. The fourth and last group of reactions include local or systemic diseases which appear in the tattoos after they have become the site of lowered resistance. It has been demonstrated that tattooed skin is more sensitive to trauma of all types than is the surrounding normal skin. Because of this lowered resistance of tattooed areas, a number of skin diseases seem to have a specific predilection for tattooed skin. Among these are chronic discoid lupus erythematosus, psoriasis, lichen planus and the skin lesions of secondary syphilis. It has frequently been noted that the skin lesions of syphilis are accentuated in and around the tattoos, except in the red portion where the treponemicidal action of the mercuric sulfide prevents the appearance of the rash.

Following are reports of four cases of unusual cutaneous eruptions involving tattooed areas:

CASE REPORTS

Case 1.—A 52-year-old white baker entered the Oakland Veterans Administration Hospital March 15, 1950, with a history of low grade fever with evening temperatures of 99.4° to 100° F. for seven weeks, of cough which was productive of about one-half cup of white non-bloody sputum daily, and of intermittent vomiting following coughing paroxysms. Continuous throbbing frontal and bitemporal headaches, and bilateral conjunctival injection without purulent discharge, developed concomitantly.

At the time of onset of these symptoms, the patient noticed elevation of certain parts of tattoos which were on the arms and chest, and he noted also that the skin overlying these areas was thickened and somewhat scaly. These elevated areas did not itch, but if they became irritated by scratching or the rubbing of clothing, "pins and needles" paresthesias were noted in the localized areas. The tattoos had been applied some 20 years before the skin lesions appeared. Antibiotic therapy prescribed by a physician before the patient was admitted to the hospital did not alleviate any of the symptoms. The day prior to admittance, sudden severe pain in the right hip developed. It was so intense the patient was unable to walk. The patient also noticed a moderate amount of swelling present about the right hip joint during the 24 hours before admittance.

Upon physical examination the patient was noted to be obese and perspiring and in obvious discomfort from severe pain in the right hip. Diffuse conjunctival injection was present. The pupils were irregular and reacted poorly to light and accommodation. In slit-lamp examination of both eyes a moderate number of leukocytes floating in the anterior chamber were observed. The retinal vessels and optic disks were normal. The posterior pharynx was injected. Chest expansion was symmetrical and there were numerous fine and medium, moist rales heard at both lung bases posteriorly. Blood pressure was 124 mm. of mercury systolic and 80 mm. diastolic. The heart was normal to physical examination. The spleen was not palpable. There was no superficial evidence of lymphadenopathy. No abnormalities of the deep tendon reflexes were noted. Tattoos were scattered over both arms and the chest. There was incomplete involvement of all tattoos by raised, scaly dermatitis. The red, blue and green colors of the tattoos were all involved. These cutaneous lesions were non-tender and felt somewhat indurated. The remaining skin, which was uninvolved by tattoo, was completely free of eruption.

In roentgen examination of the chest, pronounced and diffuse increase in the markings at both lung bases, especially behind the heart, was noted; and there was moderate hilar adenopathy. These conditions remained unchanged over a four-month period of observation. In roentgen examination of the right wrist, small cystic areas were observed in the proximal row of the carpal bones. There was a solitary cystic lesion in the distal phalanx of the right thumb. In the right hip there was a small amount of calcification about the greater trochanter of the right femur. This was interpreted as presumably inflammatory in origin.

Erythrocytes numbered 5.5 million per cu. mm. of blood, and the hemoglobin content was 17.5 gm. per 100 cc. Leukocytes numbered 5,700 with 61 per cent neutrophils, 28 per cent lymphocytes, 17 per cent monocytes and 4 per cent eosinophils. Results of spinal fluid studies and of urinalysis were normal; of serologic test for syphilis, negative. The erythrocyte sedimentation rate was 38 mm. in one hour. The antistreptolysin titre was 50 units per cc. No organisms grew on cultures of the blood. The total serum protein content was 6.12 gm.—albumin 4.08 gm. and globulin 2.04 gm. Tubercle bacilli were not noted in repeated examinations of sputum. There was negative reaction to a skin test with first strength tuberculin, and positive reaction when second strength material was used. The right supraclavicular lymph node was normal histologically. In biopsy of an elevated tattoo lesion, chronic granulomatous inflammation was observed and there were numerous epithelioid cells, and giant cells of Langhans' type. There was no necrosis in the granulomatous areas. The pathologist reported the lesion was probably sarcoid. This confirmed a clinical impression of Boeck's sarcoid.

The course in the hospital was characterized by low fever, the temperature ranging from 99° F. to 99.8° F. in the afternoons. Continuous migratory polyarthralgia developed. It involved the wrists, shoulders, both hips and knees. Although the joints were painful, there was no redness, swelling or limitation of motion. Soon after the patient was admitted to the hospital, the iritis became more severe and bilateral glaucoma developed. This was treated by giving typhoid vaccine intravenously, without appreciable benefit. Subsequently, bilateral iridectomy was done and the symptoms of glaucoma were relieved. However, there continued to be a large number of pus cells in the anterior chamber.

A three-week trial course of 1 gm. of streptomycin and 6 gm. of Promizole® daily resulted in only moderate clearing of the iritis. The vision remained blurred. Because of the persistence of the eye disase, the patient was transferred to another Veterans Administration hospital, where cortisone was available. When cortisone was given the iritis and the migratory polyarthralgia promptly subsided. At about the end of the first month of cortisone treatment, the skin lesions which involved the tattoos had completely disappeared and in a biopsy of the formerly affected skin only residual scar tissue was noted.

Case 2.—A 24-year-old white automobile mechanic noted the onset of a reddish maculopapular skin eruption upon the left arm approximately three weeks before admittance to the Oakland Veterans Administration Hospital. Shortly after the onset of the eruption the patient was given local medication in the form of ointment, but the eruption spread and became generalized. During the two weeks before admittance, headache and sore throat developed. The patient denied taking any medication before the onset of the rash, and there was no history of chancre. A reddish maculopapular eruption involved the entire body and the face. There were no lesions on the palms or soles. The lesions were firm to palpation and were all of the same size and appearance. There were multi-colored tattoos on the upper extremities, and all the colors in them, including red, were involved by the eruption. These tattoos had been applied in Hawaii several years previously. (It has been stated that the red dye used in Hawaii does not contain mercury.)

Erythrocytes numbered 5,240,000 and the hemoglobin content was 15.1 gm. per 100 cc. of blood. Leukocytes numbered 6,300—54 per cent polymorphonuclear cells, 40 per cent lymphocytes, 3 per cent monocytes and 3 per cent eosinophils. Results of urinalysis were normal. No organisms grew on a culture of the blood. Results of Kahn and Kolmer tests of the blood were strongly positive for syphilis. No abnormalities were observed in studies of the spinal fluid.

The patient received a course of 10 million units of penicillin plus five injections of Mapharsen® of 0.03 gr. each. The skin eruption disappeared in three weeks.

Case 3.—A 30-year-old white man had a tattoo, which had been present for about 12 years, on the right forearm. About six months before he was first observed, discoid lupus erythematosus of the butterfly area of the face developed. After the condition had been present for about five months, the patient went to an osteopath, who applied ultraviolet radiation to the face. Within one day the eruption on the face became much more severe, and soon afterward an eruption appeared on the forearm, involving the red-dyed areas of the tattoo. When the patient was examined the lesions on the forearm were observed to be typical of discoid lupus erythematosus—sharp margination, erythema, follicular plugging and telangiectasia. The rest of the tattoo and of the forearm were not affected by the dermatosis.

Case 4.*—The patient was a 24-year-old white male who was tattooed on the right forearm seven years prior to examination. He said that the red areas had been swollen from the time the tattooing was done and that the swelling had gradually become more severe, without remission.

It was noted in the record of the patient that in December of 1950 a biopsy specimen was taken from the area of eruption, and, in histologic examination, acute, non-specific dermatitis was noted. Following this, the patient had received one x-ray treatment to the tattooed area.

When the patient was observed for the first time on January 8, 1951, five discrete, nodular, raised, red and crusted areas were present in the areas of red tattoo. There was also a similar area in a blue central portion of the tattoo.

Results of Kahn and Kolmer tests were negative for syphilis. Patch tests with 1:1000 mercury bichloride and with 4 per cent ammoniated mercury in zinc oxide ointment were carried out, and there was a four plus reaction to both in 24 hours.

As this sensitivity dermatitis had been treated, according to the case record, with a number of ointments, as well as x-ray, and had been refractory to all medications, surgical removal of the tattoos was carried out.

*Presented through the courtesy of Norman Epstein, M.D., and James Allen, M.D.

DISCUSSION

Considering the widespread use of tattooing, relatively few complications arise. Furthermore, it is surprising how infrequently the tattoo acts as a focus of lowered resistance for the localization of cutaneous disease. Sensitization to the dyes is also rare, despite the often expressed belief that mercury is a common skin sensitizer. However, it is obvious from this brief discussion that the complications can be serious, bizarre or interesting. The induction of large numbers of men into the armed forces again may result in an increased frequency of tattooing. For this reason, this brief report has been offered.

U. S. Veterans Administration Hospital, Oakland.

REFERENCES

1. Cipallaro, A. P.: Keloid following removal of tattoo mark, Arch. Dermat. and Syph., 36:160, July 1937.

2. Encyclopedia Britannica 1950.

3. Madden, J. F.: Reactions in tattoos (Chronic discoid lupus erythematosus), Arch. Derm. and Syph., 60:789, Nov. 1949.

4. Rostenberg, A., Brown, R. A., Caro, M. R.: Discussion of tattoo reactions with report of a case showing a reaction to a green color, Arch. Derm. and Syph., 62:540, Oct. 1950.

5. Sharlit, H.: Melanoma caused by indelible pencil, Arch. Derm. and Syph., 37:301-306, Feb. 1938.

6. Shie, M. D.: A study of tattooing and methods of removal, J.A.M.A., 90:94-99, Jan. 14, 1928.

7. Smith, B. F.: The occurrence of hepatitis in recently tattooed service personnel, J.A.M.A., 144:1074-1076, Nov. 25, 1950.

8. World Book Encyclopedia, 1951.

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EDITORIAL

The King County Case

On November 15, 1951, the Supreme Court of the State of Washington reversed the trial court's decision in the case of Group Health Cooperative of Puget Sound vs. King County Medical Society et al., and directed that an injunction be issued against the King County Medical Society and the King County Medical Service Bureau and others, prohibiting any interference with the business of Group Health, and requiring the County Medical Society to admit Group Health physicians to membership if the sole ground for denying membership is their employment by Group Health.

Since this is the first case in the United States in which a court has interfered with admission to membership in a medical society, and inasmuch as it is also the first case in which a medically sponsored prepayment plan has been involved under the antitrust laws, medical organizations and medical care plans elsewhere, although they are not directly concerned, have a collateral interest in the decision. The essential facts were as follows:

Before 1933 many physicians in King County (Seattle, and surrounding area) privately engaged in contract practice on a prepayment basis. In that year, the County Medical Society adopted a report of a special committee providing that the county itself should form a prepayment plan with membership therein limited to physicians belonging to the Society, and that the Society's by-laws be modified to make it "unethical" for any physician to engage in "industrial contract practice" unless "the same shall previously have been authorized by the board of trustees of the Society."

Thereafter the King County Medical Society caused the King County Medical Service Bureau to be formed, and also the King County Medical Service Corporation. Physician membership in the Bureau has at all times been limited to members of the County Medical Society. The Medical Service Corporation enters into prepayment contracts with employer groups, and the medical services are furnished by the physicians belonging to the Bureau. The Supreme Court found:

"Both the Bureau and Service Corporation have at all times been composed exclusively of Society members, all members of the Society being urged to join. There is close coordination between the three organizations, including joint meetings. Membership in the Bureau is denied to doctors who engage in any competing industrial contract practice, and Bureau members who turn to such practice are dropped from membership."

Group Health Cooperative of Puget Sound is a corporation likewise selling prepaid medical service on a contract basis. It owns a small hospital in Seattle, which has been registered by the Council on Medical Education and Hospitals of the American Medical Association. It employs a number of physicians on a full-time salary basis. None of its physicians have been admitted to membership in the King County Medical Society, and of course none of them are eligible to be participating physicians in the King County Medical Service Bureau. They have also been unable to obtain staff appointments in several of the leading hospitals of the area.

The State of Washington by statute permits certain corporations to act as "health care contractors." When a corporation is a registered health care contractor under the Washington law, it is legally permitted to sell medical services. The Washington statute is similar to the law originally enacted in Oregon, which in effect permits the corporate practice of medicine. The Washington statute provides that a "health care service contractor" is any corporation, association, doctor or group of doctors who or which "not otherwise being engaged in the insurance business" accepts prepayment for health

care services from persons or groups of persons, in consideration for providing such persons with any health care services.

There are many additional facts, but the foregoing seem to be the most essential.

From the facts, the Supreme Court concluded that the King County Medical Society and the Bureau and the Medical Service Corporation tended to be a monopoly, and in violation of the anti-trust section of the Washington State Constitution. The Court said:

"It will be observed that three elements must be present in order to constitute any relationship a monopoly or trust within the meaning of Article XII, Sec. 22. There must be a contract, combination or other arrangement between two or more corporations, copartnerships or associations; it must relate to some product or commodity; and its purpose must be to fix prices, limit production, or regulate the transportation of such product or commodity.

"Considering the first of these elements, it is to be noted that the contract, combination or other arrangement referred to need not be in the form of a written agreement or undertaking. It may be brought into being 'in any manner whatever.' There is no written contract or agreement between the respondent associations and corporations in this case. In our opinion, however, there is a combination or other arrangement between these respondents within the contemplation of Article XII, Sec. 22.

"This combination or arrangement first came into existence when the Society, in April 1933, caused the Service Corporation and the Bureau to be organized. *By prearrangement with the Society, of which they were members, the organizers of the Service Corporation and Bureau made membership in the Society a prerequisite to membership in the Bureau.* In the same manner they arranged that *only members of the Bureau could render service under contracts negotiated and administered by Service Corporation.*

"Having established this complete and exclusive identity of interest, it was an easy matter for these organizations to formulate and carry out their mutual policies in concert. Through the device of Article III, Sec. 8, of the Society's by-laws, relating to eligibility for membership, that organization's policy of curbing contract medicine thus became binding upon the Bureau and Service Corporation. By means of the same by-law, and due to the close ties maintained through overlapping membership, *all three organizations were assured that no contract medicine plan which would compete with Service Corporation would be approved.*

"In furtherance of their mutual interests, these organizations and their members worked together in the exchange of information, the investigation of contract practices, and the enforcement of their mutual policies. They also took effective steps to prevent or discourage members of the Society from consulting or associating with appellant doctors in any professional way. *The combination or arrangement, in an effort to render Society membership indispensable, and submission to its contract medicine policies therefore obligatory, then exercised its influence and economic power to obtain exclusion* of appellant doctors from hospital staffs. There were also other steps taken in pursuance of this course of conduct, as noted earlier in this opinion." (Italics supplied.)

From the foregoing quotation, it can readily be seen that the Court considered the limitation of physician participation in the Bureau, and the exclusion from membership in the County Society of physicians who worked for competing prepayment plans, an effort by the physicians belonging to the King County Medical Society to obtain a monopoly of prepaid medical practice. Since the "health care service contractor" law previously mentioned expressly permits corporations to engage in the sale of medical services, it would seem that the plaintiff, Group Health Cooperative, was engaged in a lawful business in the State of Washington.

In the course of its opinion, the Court also pointed out that the American Medical Association had registered the hospital owned by Group Health, and that the "essentials of a registered hospital" require that the medical staff be ethical in its conduct; and hence the A.M.A. had approved Group Health. The Court likewise stated that the A.M.A.'s "Twenty Points" were complied with by Group Health, in giving its membership free choice of those physicians who are on the Group Health staff. However, it seems probable that the premise upon which the Court reached its final conclusion is that it is not lawful to restrict membership in an organization if membership therein is a prerequisite to engaging in one's trade, business or profession.

In this respect, it is similar to a recent decision of the California Supreme Court, which held that a union that had negotiated a closed shop contract with a shipyard could not eliminate negroes from union membership. Inasmuch as union membership was a prerequisite to the right to work, membership in the union had to be available to all on a uniform basis.

That this is the gist of the decision is emphasized by the fact that the court referred at length to the Associated Press case (Associated Press vs. U. S., 326 U.S. 1), and quoted with approval Judge Learned Hand's statement to the effect that a monopoly of all those interested in an activity is no monopoly at all, for no one is excluded and the essential of a monopoly is exclusion. In that instance, the federal court held that if Associated Press opened its membership to all newspapers, without restriction, then Associated Press would not be a monopoly, no matter how large it became, because everyone in the business would be free to participate in it.

After referring to the Associated Press case, the Washington Supreme Court said:

"So here, if the by-law provision which requires applicants for membership in the Society to give up their contract practice in competition with Service

Corporation were eliminated, the Society and its affiliates would no longer monopolize or threaten to monopolize contract medicine."

The foregoing factors are pointed out because, to the best of our knowledge, no Blue Shield plan limits physician participation to members of a county or state medical association, and, if we are correctly informed, most Blue Shield plans pay benefits whether the patient has selected a participating physician or not. This being so, it appears that the decision of the Washington State Supreme Court has no effect upon the operations of any Blue Shield plan.

Finally, it is worthy of note that the operations of Group Health Cooperative of Puget Sound, while lawful in Washington and Oregon, would appear to be completely unlawful in practically all of the remaining 46 states, because it is the general rule at common law, as well as by statute in some states, that a corporation may not employ physicians, attorneys or dentists and then sell their services to the public.

Letter to the Editor . . .

Organ-Specific Blood Vessels

Experimental evidence suggesting marked differences between the vascular endotheliums of different organs and tissues is reported by Pressman and Sherman[1] of the Sloan-Kettering Institute for Cancer Research, New York City. They found that when radioiodinated (I^{131}) anti-mouse-kidney serum is injected intravenously into mice, from 0.5 to 1 per cent of the radioactivity is localized in the kidneys. This localized antibody can be removed by dilute (pH 10.5) NaOH elution of the perfused (blood-free) kidney. If the resulting recovered ("purified") radioactive antibody is injected intravenously into a second mouse about 8 per cent of it localizes in its kidneys. Pressman believes this localization of purified anti-kidney antibodies is on the surface of the vascular endothelium. This conclusion he confirmed by radioautographs[2] showing a marked concentration of radioactivity in the glomeruli within as little as 2.5 minutes after intravenous injection.

By a similar technique the New York immunologists studied the localization of radioiodinated anti-rat-lung antibodies recovered by pulmonary elution. Injected intravenously into rats, this purified radioactive anti-lung antibody showed a striking localization in the lungs.

From these and other data Pressman concluded that there are marked differences between different regional vascular endotheliums. This suggests different functions for the epitheliums of different organs and tissues, conceivably mechanisms for the selection transmissions of different nutritional substances or excretion products. Pressman further believes that these endothelial differences are basic factors in the etiology of glomerulonephritis and other diseases resulting from autoimmunization.

W. H. Manwaring, M.D.
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REFERENCES

1. Pressman, D., and Sherman, B.: J. Immunol., 67:15-21, July 1951.
2. Pressman, D., Eisen, H. N., and Fitzgerald, P. J.: J. Immunol., 64:281, 1950.

CALIFORNIA MEDICAL ASSOCIATION

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Proceedings—1951 Interim Session

SATURDAY MORNING SESSION DECEMBER 1, 1951

The Interim Session of the House of Delegates of the California Medical Association was held at the Biltmore Hotel, Los Angeles, California, December 1 and 2, 1951. The Saturday morning session was called to order at 10:20 a.m., Saturday, December 1, 1951, by the Speaker of the House, Dr. Donald A. Charnock, who presided.

SPEAKER CHARNOCK: Gentlemen and Ladies: We are going to call the meeting to order unofficially. We still lack about twenty delegates to make up our quorum. We have sent the folks down to get the stragglers who are down registering for their rooms so that we will have a delegation soon. In the meantime I wish the unanimous consent of the House to present an old friend of mine to this organization, Dr. Elmer Hess of Erie, Pa., who is one of the famous gentlemen in organized medicine. He is a past president of the Pennsylvania Medical Society and he is a delegate to the American Medical Association. At the present time he is president of the American Urological Association. It gives me a great deal of pleasure to be able to present to you Dr. Elmer Hess of Erie, Pa. Dr. Hess! (Applause.)

DR. ELMER HESS (Erie, Pa.): Mr. Speaker, Mr. President-elect, Ladies and Gentlemen: Seventeen years ago I addressed your society at Riverside and in the 17 years subsequently I have visited many of your associations in this great state. I want to tell you how much we in the East think of the California Medical Association. You have sent to our national organization men who are more than representative of the highest ideals to which medicine aspires. I can assure you that the men that I have known who have been delegates from your society to the American Medical Association have been men of honesty and integrity and very well represent you in the national body.

I also would like to say a few words about your C.P.S. You know we bitterly fought any commercialism in medicine and for years many of our older leaders felt that any surrender of our fundamental principles was bad. However, we have been forced to meet issues and we should meet them. We have had to fight the encroachment of the Social Security people in Washington and also to render real service to those who are unable to pay for their services in full because, God knows, we have always taken care of the poor without question. We have found it not only advisable but proper to fight the regimentation of our profession by offering to the public something that gave them self-pride and stimulated their willingness to stand on their own feet and support their families. So medical insurance sponsored by the doctors came into being.

I want to congratulate your great society on the wonderful program of insurance that you have provided for the people of your state. I am particularly interested in your experiment to take care of the chronically ill in an insurance program. I think this is one of the great experiments that has been made in physician-sponsored insurance and I want to congratulate you for your foresight and for your wisdom and things like that that make it possible for the rest of us throughout the country, quite frequently following your example and quite frequently giving you ideas also, to prevent in the future the regimentation of American medicine. Personally I am not much worried about American medicine being regimented. I am much more worried about American life being socialized and this is only one facet in our fight.

I had a speech prepared, a rather emotional speech, to give you but when Don Charnock asked me to talk and said that I should pull my punches, this talk was cut down the middle. We must separate the sheep from the goats. We must attack our enemies by being on the defensive. We have to take a stand and our stand should be that which is good for America and the things that are good for the individual and make of him a self-respecting person; that is the only thing that government should do.

Don't forget—our ancestors came here to have freedom. Did it ever occur to you that they came here to have freedom and just one thing, freedom from government, and when our Constitution was written it was a marvelous instrument but without the implementation of the Bill of Rights it was virtually worthless. I think we should reread and rededicate ourselves to the principles of government established by the Bill of Rights and we should stop being subsidized by the government. These were the

principles of your forefathers and let us say we will have less and less and less of government subsidization and more and more and more of individual dignity and freedom.

I might tell you a little story, to become facetious for a moment. I had a little personal experience a few years ago and I would like to share it with you. I have four and one-half acres of lawn and at my odd moments I used to get out and dig weeds and keep the grass growing green. One day while I was digging, a limousine drove up with a liveried chauffeur. A very sweet woman's voice said, "Please come here." So, sensing something funny, I strolled over. I had on an old hat and old clothes and I was dirty and I was pretty much messed up. The lady in the limousine said, "Do you keep this lawn up all by yourself?" I said, "Yes, ma'am."

"I understand a doctor by the name of Hess lives here; what sort of a person is he?"

"Well," I says, "he is a so-and-so but I have to earn a living."

She said, "What does he pay you?"

"Well," I said, "he is not very liberal. He only gives me $100 a month and my board."

She reached into her pocket and took out her card and then she said, "Any time you wish to change employers I will be glad to give you $150 a month."

"Yes, ma'am, but here I have the privilege of sleeping with the lady of the house."

She said, "Drive on, James."

Some time later I was at a luncheon. I was sitting at the head table and this lady came up to me and said, "Perhaps you won't recognize me." She was very sweet and she said, "So Dr. Hess is a so-and-so, is he?" and then she told me who she was and made reference to the incident at the house on top of the hill and then she said that at that moment she realized that I was Dr. Hess and that I had just sold her a bill of goods.

Thank you so much. (Applause.)

SPEAKER CHARNOCK: Thank you Dr. Hess.

We have a few minutes before we get a quorum. We have another distinguished doctor, Dr. Stanley Kenney, the president of the Medical Society of the State of New York. Dr. Kenney, will you take a bow?

DR. STANLEY KENNEY: Mr. Speaker, members of the House of Delegates of the California Medical Association: I believe, if my memory serves me right, that this is perhaps the first time that a president of the Medical Society of the State of New York has had the privilege of speaking to the California House of Delegates. I deem it a real honor and privilege that I can be here for just these few minutes.

I have had contacts for a number of years with members of the House of Delegates to the American Medical Association from this state. I look back over the recent developments in the American Medical Association and I am quite sure you gentlemen are well aware of the impression that this delegation has exercised upon the house. It has been a constructive one. I know you have become progressive.

I did not have a prepared speech like Dr. Hess had but I want to bring you the very good wishes of the council and officers of the State of New York and members of the New York State delegation who are here to attend this convention. I am looking forward to sitting here and gaining considerable knowledge and experience in listening to the deliberations of your sessions. Thank you. (Applause.)

SPEAKER CHARNOCK: Thank you, Dr. Kenney.

We will now call the first Interim Session of the House of Delegates of the California Medical Association to order. The Chair will recognize Dr. Cook, the chairman of the Committee on Credentials. Dr. Cook!

DR. WELLS C. COOK (Chairman, Credentials Committee): Mr. Speaker, we have a quorum.

SPEAKER CHARNOCK: Thank you, Dr. Cook.

DR. COOK: And all of the oaths are signed.

SPEAKER CHARNOCK: The first order of business will be the roll call by our Secretary, Dr. Daniels.

. . . The roll was called by the Secretary, Dr. Albert C. Daniels. . . .

SPEAKER CHARNOCK: At this time we will announce the Reference Committees and ask for approval:

REFERENCE COMMITTEE No. 1—E. R. Lambertson, Los Angeles, chairman; Dave Dozier, Sacramento, Garnett Cheney, San Francisco.

REFERENCE COMMITTEE No. 2—J. Norman O'Neill, Los Angeles, chairman; Carl R. Howson, Los Angeles, Hollis L. Carey, Gridley.

REFERENCE COMMITTEE No. 3—Lyle Craig, Los Angeles, chairman; E. C. Halley, Fresno, Reuben Zumwalt, San Francisco.

REFERENCE COMMITTEE No. 4—James R. Graeser, Alameda, chairman; Lawrence Nelson, Santa Barbara, Edward C. Rosenow, Jr., Los Angeles.

If there is no objection from the House, these will constitute the Reference Committees.

The first order of business will be a little word from our President, Dr. H. Gordon MacLean. Dr. MacLean!

DR. H. GORDON MACLEAN: Mr. Speaker, distinguished guests, Members of the House of Delegates: I thought I was going to get away without having to give a speech today. I am not going to give you one. I am just going to say a few words as your Speaker told you.

I don't know what Dr. Hess was talking about because I came in just at the very end but there was a lot of laughter going on. I know it must have been good as whatever you hear from Dr. Hess is always good. Anyway, I have heard him before and he always tells you things very much worth while.

I am sure we are all very happy to have Dr. Kenney here from the City of New York. We feel honored in having these gentlemen present.

As you know, this is the first time that the California Medical Association has had an Interim Session. Just how valuable this session is going to be, we will not know until it is over. If it is worth while, undoubtedly you will want to continue it. If it seems

that it is not worth while, perhaps you will want to dispense with it. However, there is one thing coming up that I think is going to be very important, not so much at this meeting but for the entire membership, and that is the study concerning California Physicians' Service. Prepayment medicine is here to stay. There is no question about it. As you know, you appointed a committee to study C.P.S. and it is my understanding that this committee is going to report to you and make a recommendation of the various complete studies and surveys of C.P.S. that have been made. I do hope that you will allow it to be done and that you will wait until the final report is given at the Annual Meeting before you make up your mind about any changes in C.P.S. C.P.S. is far too important to change in any way without due deliberation and a great deal of consideration. Thank you. (Applause.)

SPEAKER CHARNOCK: Thank you, Dr. MacLean.

There are a few announcements to be made. As you know, resolutions have to be presented in triplicate and stenographic service is available for you for that purpose.

. . . Further announcements. . . .

After the completion of the business part of this session, we have a scientific program. We have two distinguished speakers, Dr. H. Corwin Hinshaw, clinical professor of medicine, Stanford University School of Medicine, and Dr. M. Paul Starr, clinical professor of medicine, University of Southern California School of Medicine. They will speak immediately after the Business Session and I hope that you will all honor them with your presence.

The next order of business is the Report of the Council, Sidney J. Shipman, Chairman.

REPORT OF THE COUNCIL

DR. SIDNEY J. SHIPMAN: Mr. Speaker, Members of the House of Delegates: I am going to read this report for two reasons; in the first place, because we wish to make it a matter of record as it commits the Council and, in the second place, because we want to conserve your time. Copies of this report are being distributed to you at the present time so you can follow it yourself.

As the official body designated to carry on the activities of the Association between meetings of the House of Delegates, the Council of the California Medical Association presents its report on its stewardship since the close of the 1951 Regular Session of the House of Delegates. For convenience, this report is made in sections.

1. *Meetings:*

Since the close of the 1951 Annual Session the Council has held four meetings and the Executive Committee of the Council has also met four times. Thus there have been eight meetings in a period of 28 weeks, permitting the transaction of business without undue delays. In addition, the members of the Council and of its Executive Committee have been in frequent contact by telephone, correspondence and personal contacts.

2. *Public Relations:*

The Council has approved in principle a complete public relations program to be operated by the Association itself and has authorized the employment of personnel for this work. Under this program Mr. Ed Clancy, formerly field secretary, has been named public relations director and Messrs. Glenn Gillette and J. L. Pettis have been employed as assistants, to work with the county medical societies.

To date the public relations staff has cooperated with county medical societies in matters of newspaper advertising, press relations, inauguration of a radio program, blood banks and other matters. Similar cooperation has been offered all county medical societies and the various proposed programs are under consideration in different areas.

In addition, President MacLean and President-elect Alesen have visited with 25 of the state's 39 county medical societies, in company with public relations representatives, to discuss positive programs by the county societies.

3. *Public Health:*

The Council has authorized and has received a preliminary report on the health facilities in Mendocino County. This study was made as a joint undertaking with the State Department of Health and the California Tuberculosis and Health Association.

The Council has also approved a preliminary study to be made in Santa Clara County on the advisability of undertaking a morbidity study there as a pilot test. This activity is to be undertaken with the cooperation of the State Department of Public Health and the Santa Clara County Medical Society.

4. *National Foundation for Infantile Paralysis:*

Discussion was held with the National Foundation for Infantile Paralysis relative to medical fees in poliomyelitis cases and agreement was reached to the effect that fees should be determined between physician and patient, that the physician should not look to or accept fees from a non-legal source and that all such treatment should be on the basis of a private case. This understanding is designed to end misunderstandings on this subject.

5. *Student Nurse Recruitment:*

In cooperation with the California Association of Hospitals, nursing schools and other groups, the Council has voted to support a concerted drive to recruit student nurses and has contributed $2,500 toward this program.

6. *Student A.M.A.:*

The Council has voted to support the California chapters of the Student A.M.A. and has named Association members to serve as members of the advisory committees established with each Student A.M.A. chapter. It was also voted to pay the expenses of two members from each chapter to the Annual sessions of the Association and of one member from each chapter to the Annual meetings of the Student

A.M.A. The Council has also approved the cooperation of the Association in arranging speakers and other participation in chapter activities and programs.

7. *Blood Banks:*

The Council has been pleased to note the establishment of additional blood banks under the program of the Blood Bank Commission. At present 11 blood banks are in operation or under course of establishment and eight banks are participating in the armed services blood program. In continuance of its policy of extending financial assistance to new blood banks, the Council has approved loans on a basis of no interest to blood banks in Eureka, San Bernardino-Riverside and Bakersfield. Repayments are now being made regularly on similar loans advanced to blood banks in San Diego and San Bernardino-Riverside.

8. *Psychology:*

The Council has appointed a committee to review the situation surrounding the practice of psychology. Such a committee results from the 1951 session of the State Legislature and will devote its efforts to a study of the possible need for legislation to control this practice.

9. *Industrial Accident Commission:*

The Council has voted to appropriate funds to the Committee on Industrial Accident Commission, in order to permit the committee to make economic studies designed to bring industrial medical fees in line with present costs. Preliminary studies have already been made and others are now under way, with the expectation that a revised fee schedule may be prepared in the near future.

10. *Public Policy and Legislation:*

At the close of the 1951 session of the State Legislature, every measure approved by the Council was passed and every measure opposed was defeated. The Governor, for technical reasons, failed to sign two of the measures adopted and further efforts will be made to secure their enactment into law at future legislative sessions.

Compulsory health insurance was not a real threat in the 1951 session, although a bill for its enactment was again introduced. More recently Governor Warren, as you know, has again gone before the people with a further demand for compulsory health insurance. In the light of our present deliberations, this latest move by the Governor becomes a prime factor.

11. *California Physicians' Service:*

At the last meeting of this House of Delegates a resolution was adopted requiring the Council to appoint a special committee to investigate the purpose and the future role of California Physicians' Service. This committee has been appointed, with Dr. Wilbur Bailey as its chairman and Drs. James B. Graeser, Oakland; Alson R. Kilgore, San Francisco; Dave F. Dozier, Sacramento; F. E. West, San Diego; J. M. de los Reyes, Los Angeles; Harold P. Tompkins, Los Angeles; Donald A. Carson, San Francisco; J. Gary Campbell, Santa Barbara; Henry A. Randel, Fresno; F. E. Clough, San Bernardino; Paul Foster, Los Angeles; Thomas Farthing, San Mateo; and Leslie B. Magoon, San Jose, as its members. The makeup of the committee, as you will readily see, includes representation from the geographical areas of the state as well as the various medical specialties.

This committee has made a preliminary report to the Council and has outlined some of the problems facing the committee and some of the suggestions advanced for approaching what we all recognize as a difficult task.

In discussing the importance of our voluntary health insurance I think that those of us on the Council are so close to the picture that we forget to realize that the membership in C.M.A. has doubled in the past ten years and that many of our present colleagues were not practicing in California during the dark days of 1939 when the then Governor Olson first advanced this scheme of political medicine and the regimentation of the profession.

For a moment, then, let me review:

Olson's administration was a "depression administration." I stress that point also for our newer colleagues in California to remind them that California's economy has not always been that which we are now experiencing.

Olson introduced this compulsory health insurance legislation in January 1939. Almost simultaneously, but as the result of more than 20 years of study, the California Medical Association produced California Physicians' Service as its means of solving what was recognized as a great public problem —the problem of permitting the prepayment of unpredictable medical costs. The late Dr. Ray Lyman Wilbur, known and loved by all of us, was its first president.

Since it was the first plan of its kind in America —the first voluntary plan with free choice of doctors and hospitals—the first to be supported, sanctioned and sponsored by a State Medical Society—we can only wonder now that it did not suffer more birth pangs than it did. C.M.A.'s membership at that time was around the 5,000 mark.

C.P.S.'s membership was zero.

From the start, it had a steady growth.

And, it met a definite need on two fronts.

It met the need for some type of voluntary—not political—prepaid medical care whereby the provident people of California could secure coverage against the ever-present threat of illness or costly accident.

Of timely importance — it was the profession's professional answer to the politicians.

The doctors of California in 1939 went to the people with the oft-repeated statement, that there was "nothing in the field of medical care that government could provide that the profession could not do better—and at less cost."

Suffice it to say, we were sincere and we were believed.

We were believed then. And today, with nearly a million members, we stand by our original statement! None of us would retreat. Yet, all of us are aware of areas for improvement.

Governor Olson failed to enact his compulsory health insurance bill in 1939—and he failed to get reelected in 1942, when Earl Warren was chosen as the State's Governor.

Warren had always been a friend to the medical profession and to several of its Alameda County members who had worked with him and helped guide him in his political career. When he was elected Governor, many doctors sighed with relief.

After two years in office, however, Governor Warren brought out his own compulsory health insurance bill. First he came to the California Medical Association, in December, 1944, and told the Council that the C.I.O. was writing a health insurance bill. If the doctors would work with him, he said, they could write their own ticket and avoid the dangers in the prospective C.I.O. measure.

All of you know the history of that campaign. Despite repeated meetings with the Governor, we were unable to sway him one inch from his stand in favor of state medicine. He insisted that his measure —which was almost identical to the C.I.O. bill—was the only answer to the needs of the people.

He imported an expert witness from Michigan to testify before an Assembly committee in behalf of his bill. He used the power of his corner office to seek votes for his bill. At one time the pressure on the Assemblymen was so great that his measure was kept off the floor of the Assembly by only two votes.

Again in 1947 Governor Warren introduced a compulsory health insurance bill in the Legislature. Again it was defeated. Again in 1949 he did the same and found only a handful of legislators who were willing to listen to his proposal.

In the 1951 legislative session the Governor did not bring up his bill. He announced before the session started that he would not have that type of legislation to offer. The State Federation of Labor did introduce its perennial health insurance bill but it was not even dignified with a committee hearing. It died at the bottom of the legislative pile in a committee room.

The consistent decrease in interest by the Legislature in compulsory health insurance was not just a coincidence. It came about through a lot of hard work put in by our legislative representatives and through the increasing knowledge on the part of the legislators that the voluntary forms of health insurance were doing an increasingly effective job.

The California Medical Association, as you know, launched a statewide drive to sell voluntary health insurance to the people of California. Campaigns were put on in each county to foster a public awareness of the availability of voluntary health insurance. The Blue Shield plan, the Blue Cross plans, the commercial insurance contracts were all given a boost, a shot in the arm to stimulate all of them to greater efforts. Membership in the voluntary plans started to grow, slowly at first and then at a more rapid rate. More and more insurance carriers came into the field.

The result of this activity was that the number of Californians who had voluntary health insurance coverage grew at a tremendous rate, until today we estimate that between 60 and 70 per cent of the people in the state have some form of voluntary health insurance protection. This, we may add, is a larger number than the Governor had proposed to cover with his compulsory tax program.

With that history in the past six years, many physicians were lulled into a comfortable sense of security, believing that Governor Warren had given up his plans and would stay away from compulsory health insurance. On the other hand, many of our leaders kept telling us that as long as Mr. Warren occupied a high political post he would keep on plugging for the state health insurance idea.

Thus it was no great surprise to many when—just five weeks ago—he stated to the American Public Health Association that the state must establish a system of health insurance. A few nights later, on a nationwide radio hookup, he again claimed that the states must do the job of providing a prepayment plan.

The California Medical Association answered the Governor's latest claims and pointed out that he had never given any support or encouragement to the many voluntary plans already in operation. The C.M.A. pointed out that the Governor's statements were probably based upon his own political ambitions—and within three or four days he came out with his announcement of his candidacy for the presidency! We hope that our statement didn't give him the idea!

The top officers of the American Medical Association took up the issue on a nationwide basis and warned all state and county medical societies of Mr. Warren's beliefs. Even President Truman remarked that Mr. Warren was really a Democrat but didn't know it.

Now, then, whether we wish it or not, California is once again in the forefront of the battle of socialism and regimentation versus freedom and the opportunity to continue to practice medicine as we know it today.

It was most fortunate, therefore, that at the last meeting of the House of Delegates you instructed your Council to make a complete study and report on every phase of California Physicians' Service.

C.P.S. has grown from zero membership to almost a million in the short space of 12 years.

During this growing-up period, of necessity there have been growing pains.

Contracts, the coverage to the members, have changed.

The policies, the aims and objectives of C.P.S. have varied.

Now, at this time, we of the Council are in true agreement with the House: now is a propitious time for inventory.

In taking this inventory we must bear in mind not only the legislative demands which have been made both in Sacramento and Washington but also the trends which have become apparent in the past few years in the development of closed-panel medical care groups. Some of these groups, as you know, are under lay control, some are sponsored by self-seeking individuals and some threaten to go beyond the bounds of anything we have so far seen.

I would refer you specifically to the official bulletin of the San Francisco Labor Council, issue of November 14, 1951, in which the secretary of the council describes in some detail the operation of three currently-operating closed-panel clinic groups in eastern cities. These groups function on the basis of the employer paying a fixed percentage of wages into a union health and welfare fund, out of which the union provides its own hospital facilities, employs doctors and arranges for specialist services.

The secretary of the San Francisco Labor Council recommends in strong language that the unions in San Francisco give serious thought to the establishment of a similar setup in the Bay area.

We should also bear in mind the fact that our own California Physicians' Service has been in the fortunate position of being able to bargain collectively for us in such matters as the home-town medical care of veterans. This program has been in effect for some four years, has paid medical and surgical fees of almost $10,000,000 and has successfully retained for the private doctors of this state the care of their own regular patients who otherwise would be directed to Veterans Administration facilities.

The committee, for our information, should explore, define and come up with costs of cradle-to-the-grave, all-inclusive coverage.

Should C.P.S. become an indemnity company? How would such a change affect our public and legislative relations in California? What impact would it have on medico-political affairs throughout the nation? What would our friends in the insurance companies think of such a project?

Should there be fewer C.P.S. policies? Limited policies, fewer in number, thus eliminating much cost and confusion?

Are we paying too much attention to "nose-bleed" cases and not giving enough attention to the catastrophic and near-catastrophic cases?

Catastrophic coverage?

First—what is a catastrophe?

Politicians know the power of the word. Indeed, it has become a part of most of their vocabularies. It is the sensational. It is the spectacular because it serves as the "horrible example" and the patient always dies after a life of poverty for himself and his family.

Are we as doctors meeting the politicians with a plan to care for these relatively few cases where catastrophes generate real hardships?

I believe there is much to be done in this field.

Once it is done we will have the answer—the spectacular answer—and we will drive the politician from his soap box.

It is my understanding that C.P.S. has had encouraging experiences as to the practicality of "catastrophic coverage"; that it can be written—safely written.

If so, probably our new committee will come up with recommendations that a sensational policy can be written to cover the catastrophic cases—without limit—at acceptable fees—and at low costs.

These are but a few of the questions posed for the C.P.S. Study Committee.

As you know, there are other committees on related matters such as Dr. DeWitt Burnham's C.P.S. Fee Schedule Committee, the study being made by the Santa Clara County Medical Society, a survey now going on within C.P.S. and financed by C.P.S., the C.P.S.-C.M.A. Liaison Committee and Dr. Frank Cox's Industrial Accident Commission Committee.

The C.P.S. Study Committee will doubtless find the work of these other committees of great value.

In this presentation I have attempted to report to the House of Delegates on your Council's stewardship of those affairs which have come within the past six months.

I have—because I felt it a long-overdue duty—traced some of the history of C.P.S. and our forced involvement in things political. I have done this knowing full well that, to many doctors here assembled, it is repetitious. Regardless, I think we can all do well to look back occasionally and remember the reasons which culminated in our actions in the Olson-depression days of '39 and the start of the Warren era in 1945.

At some length, I have recited various ideas and philosophies revolving around the entire question of prepaid medical care.

The Council will have failed in its presentation if we have not convinced you of our attitude that *now*—right *now*—we face *not* a crisis, but a time for sound, reasoned evaluation of our efforts in the voluntary health insurance field.

Because of the various factors we have touched upon, *now* is the ideal time to start making decisions.

As professional men—as scientists and doctors—I am certain we will not want to make a hasty diagnosis of C.P.S.

Rather, let us first make the most complete work-up within our power and within the power of "specialists" outside the profession whom we may call into consultation for the diagnosis.

The C.P.S. Study Committee, whose names I have given you, is a capable committee made up of forthright, honest, intelligent physicians.

If they are to come up with the diagnosis and the schedule of treatments—if they are to accomplish the job we have asked them to accomplish—they will probably require funds in excess of amounts the Council feels it should grant without first getting not only the approval but the enthusiastic support of the House of Delegates.

This cost has been estimated at between $30,000 and $40,000—a large sum of money!

Members of the Council are in unanimous agreement that the expenditure will be worthwhile.

Members of the Council have faith in the committee.

It is our belief that at this point the committee, after detailed study and analysis, with the assistance of business experts, will come up with conclusions and recommendations—made obvious by their study—that will set our prepaid medical care plan on a sound course which it can follow with success for years to come and with adequate service to more people.

That course will, we are certain, give due consideration to the needs of the public and our declaration that "in the field of medical care, there is nothing that government can do that the profession cannot do better and at less cost."

At the same time, we are equally certain that that cost can be a figure which will provide an acceptable fee for the doctors and the hospitals providing the services.

It is upon this basis—this faith—that the Council urgently requests that the House of Delegates pledge its strong support of California Physicians' Service through a reaffirmation of the belief in and support of a continued and a strong C.P.S. This is our vehicle, our implementation of our mutual objectives.

SPEAKER CHARNOCK: Thank you, Dr. Shipman. This report will be referred to Reference Committee No. 1.

The next report will be the report from the Editor of CALIFORNIA MEDICINE, Dr. Dwight L. Wilbur.

REPORT OF THE EDITOR OF CALIFORNIA MEDICINE

DR. DWIGHT L. WILBUR: Mr. Speaker, Members of the House of Delegates: I wish to report briefly on two matters concerning CALIFORNIA MEDICINE. At the last meeting the House of Delegates requested that two features be considered for CALIFORNIA MEDICINE. The first was a page on medical economics and the second was a page or section on the Student American Medical Association.

In regard to the first matter, the Editorial Board held off Dr. Alesen and others as this matter is now under consideration. We wanted to start this feature during the course of the first part of 1952. It is not an easy subject to develop and that is the cause of the delay.

On the matter of the second one, the Student American Medical Association, it was felt in view of the reaction of some of the other publications which had been issued that it would be wise to seek their consent and their cooperation before we embark upon such a course. Consequently, it was decided to delay this matter until the medical schools reconvened in late September of this year. By that time the American Medical Association had taken the initiative and, as you may know, it established a journal for Student American Medical Association. I have not as yet had an opportunity to see this journal, but I am sure from the individuals who are going to be responsible for it that it will be a good publication. In view of this publication I raise the question of whether the California Medical Association should include in CALIFORNIA MEDICINE a page or section on this particular subject. I have no recommendation to offer you members but I would like to get the opinion of the House concerning this matter.

SPEAKER CHARNOCK: Thank you, Dr. Wilbur. That will be referred to Reference Committee No. 1.

The next order of business will be a report from our Legal Counsel, Mr. Hassard.

REPORT OF THE LEGAL COUNSEL

MR. HASSARD (San Francisco): I shall endeavor to make it short so I will be as brief as I can and cover the subjects that it is imperative that you be informed about. One specific subject that I will report to you on now relates to the field of anti-trust enforcement.

There are four cases pending against medical societies at the present time that relate to the field of restraint of trade and monopoly. One is in Oklahoma, one in Oregon, one in the state of Washington and one in San Diego. The one in Oklahoma involves the Elk City group and it is contended hat the local medical society has opposed it and that this opposition has involved a restraint on the Elk City business. This case is in its preliminary stages and there isn't anything that I can add to it at this moment that will be of help to you.

The suit in Oregon was commenced by the Federal Government, by the Anti-Trust Division of the Department of Justice. It arose out of the long history in the state of Oregon that I will just quickly summarize. Oregon, unlike the rest of the states, by legislative act permits corporations to sell medical services on a prepaid basis. Under that law there have been operating in Oregon for many years lay-owned corporations called hospital associations. They undertake to sell to the public prepaid medicine and hospital service, not insurance, and in the terminology that is used the Oregon people who belong to any hospital associations are given tickets. They are supposed to take the tickets in to the doctor of their choice and then the doctor who may or may not have had any prior relationship with the hospital association either must take the ticket, in which case he looks solely to the corporation for payment of his fee at the rate fixed by the corporation or he may refuse to take the ticket, in which case the patient either has to pay him or go elsewhere.

Over a long period of time physicians in Oregon have opposed the so-called hospital associations and the ticket-taking. As a result of that opposition over a long period of years the hospital associations complained to the Federal Government and an injunction proceeding was commenced under the Sherman Anti-Trust Act. The federal judge who tried the case decided in favor of the medical societies and the individual physicians who were the defendants. He held in effect that the Oregon physicians were not engaged in anything or in any course of action that

involved a restraint on the hospital associations or the intent to monopolize. That case is now on appeal before the United States Supreme Court. It will be decided within the next few months. When it is decided we will know a great deal more than we know now as to the relationship between physicians and prepaid plans.

The case in the state of Washington entails a little more. It has now finally been decided by the Supreme Court of the state of Washington. The decision was announced about ten days ago. The opinion was 80 pages long and I will not attempt to summarize it in a couple of minutes and I will of necessity oversimplify it. I will try to give a description of the case. It was commenced by a closed panel cooperative called Group Health of Puget Sound. It was operated by a staff of physicians on a salary basis and it sells prepaid service contracts. It also owns and operates a small hospital in the city of Seattle.

In Seattle the local King County Medical Society for many years has had a by-law provision prohibiting any member of the society from participating in any prepayment plan except such plans as have been approved by the society. The only plan that has ever been approved is the Medical Service Bureau and that is operated by the King County Medical Society itself, also a prepayment plan operated by the County Medical Society. It expressly limits participation in it to doctors who belong to it; so, in other words, if a patient goes to a physician who is not a member of the King County Medical Society and that patient belongs to the Medical Service Bureau, he cannot receive any benefits from his contract.

Group Health commenced its action seeking an injunction and damages and claiming that the activities of the society were a restraint and that it tended to create a monopoly. The Washington State Supreme Court found in favor of Group Health. In doing so it based its decision on really three main points, and this is what the court found: That the American Medical Association registered Group Health Hospital in approximately 1948; that the A.M.A. rules for registration are essentially that a registered hospital requires that the staff of the hospital be ethical in its conduct. Therefore, the court concluded that the A.M.A. favorably passed on Group Health. Second, the so-called 20 points that were adopted by the House of Delegates of the A.M.A. on recommendation of the Council on Medical Service about two years ago were quoted at length to emphasize that the A.M.A. through its 20 points has defined free choice of participating physicians, not necessarily free choice of all physicians.

The court then conceded that, regardless of what the A.M.A. may or may not have done, every local medical society is free to have rules of its own in addition to the A.M.A. rules. The court then found that the King County Medical Society's combination of precluding any of its members from participating in any plan, unless approved by the society, plus the fact that its own plan limited participation to society members, that combination tended toward a monopoly and that if carried to its conclusion no prepaid plan, free choice or otherwise, could exist in the area except the one operated by the County Medical Society.

That term "monopoly" is quite confusing and I would like to define it for a second. The United States Supreme Court has held that an organization that is open to membership for all people of its class involved is not and cannot be a monopoly because the essence of a monopoly is exclusion. If you do not exclude, then you do not have either a monopoly or anything that tends to monopoly. The Supreme Court of the state of Washington dwelling on that pointed out that the King County Medical Society did exclude. It excluded doctors who were not members of the society from any participation in its own plan and excluded from its own membership anyone who participated in a plan other than the Society's. The court then directed that the Medical Society not refuse membership solely on the ground that the applicant was employed by Group Health.

The court then further decided that there was no proof of damage and that the claim of Group Health that it had been injured in a monetary sense had not been proved.

It seems that there has been a flood of publicity and a flood of, say, propaganda, resulting from the decision in Washington. It is essential that you bear in mind just exactly what the facts were before the court. Bear in mind that the County Medical Society in its own prepayment plan did not permit participation by any doctor other than its society members. Bear in mind the other facts involved in the case.

The fourth action, that is, in San Diego, is really two cases. On the one hand it is a suit by the Complete Service Bureau under our local anti-trust law called the Cartwright Act seeking damages on the ground that the Complete Service Bureau has been hindered by the attitude of physicians in San Diego. The second case is a counter-suit by the San Diego County Medical Society against the Complete Service Bureau primarily on the ground that it is a corporation practicing medicine and asking the court to enjoin it from continuing to do so. That case has been tried. The trial took place in September and the case is now being argued, first in writing and then later orally, and it will be decided sometime early next year. After it is decided the original suit for damages will either be tried or not tried. The case has proceeded backwards in that the cross-complaint was tried first rather than the original plaintiff's action. At the present time there is nothing definitive so far as the San Diego action is concerned but when it is decided it will decide for California and settle a great deal of the problems that we have had before us.

SPEAKER CHARNOCK: Thank you very much, Mr. Hassard.

That report will be referred to Reference Committee No. 2.

We will now have the report of the C.P.S. Study Committee, Dr. Wilbur Bailey.

PRELIMINARY REPORT OF THE COMMITTEE TO STUDY C.P.S.

DR. WILBUR BAILEY (Los Angeles): Mr. Speaker, distinguished guests, and Members of the House: We have a Preliminary Report of the California Medical Association Committee to Study C.P.S. The committee was formed under the resolution which reads as follows:

"*Resolved*, That the Council of the C.M.A. be urgently requested to appoint a representative committee to ascertain the expectations of the medical profession of California in regard to C.P.S. The function of this committee shall be to make a careful study of C.P.S. as related to the operations of private insurance companies and other prepaid medical care groups, and to determine the future role and purpose of California Physicians' Service in the whole field of voluntary prepaid medicine."

Although some of its members, including the chairman, have but recently been appointed, a sufficient interchange of ideas has occurred so that the committee finds itself in accord in respect to many problems. It is the belief of the committee that in order to be convincing, its ultimate report should be as objective and impartial as possible. To that end it is recommended that specialized services be obtained in the shape of a business consultant with an adequate staff.

Such specialized help might take from five to six months and cost between three and five thousand dollars a month. Such a study, carefully supervised, would have the advantage of being more convincing because of its objectivity. We as doctors make a living because of our specialized knowledge. We are not statisticians, auditors, or insurance men, and if our studies on this twenty-four million dollar corporation are to be thorough, we must expect to employ expert business consultants. Making a thoroughgoing study of C.P.S., its competitors, the doctors' and patients' attitudes toward it, is no job for a busy doctor in his off-hours.

However, because such a survey has not yet been made, it does not mean there are not many questions that can be considered and settled at this meeting, which will dictate the course your committee will follow before its report at the April meeting. C.P.S. was born under the stress of political necessity, and while no one should fool himself that threats of socialized medicine are things of the past, it nevertheless behooves us to take stock of our own and other medical insurance plans as they exist at the present time. If we were to start anew, would we follow our present methods? Are other states using similar methods succesfully? To speak with absolute candor, C.P.S. in the eyes of a businessman might have been considered bankrupt since the outset. We have avoided total and absolute insolvency over the last 11 years by paying only from 50 to 90 per cent of the unit value. The remaining 10 to 50 per cent has been taken out of the hide of the doctor—and he does not like it any more.

The demand that C.P.S. be placed on a footing to offset the deep-seated and growing discontent of the physician members is very great. The argument that there are 10,000 physician members in C.P.S., which is claimed to be about the number of C.M.A. physicians, loses force when it is taken into account that there are more than 18,000 physicians in the state. It loses further force as it becomes apparent that wholesale resignations are, in the opinion of many, very close. It is to be remembered that at the present time the physician who resigns is not penalized, but merely automatically puts himself on an indemnity basis—a position which many doctors favor anyhow, and which we will discuss further later.

Again to look at our present over-all picture with the eyes of a stranger, it would appear that C.P.S., the doctors' own insurance plan, whether large or small, should be a model system, or in effect a pilot plant in which various systems were tried and discarded until the ultimate pattern was reached which pleased both doctors and patients. If after more than ten years such be not the case, it is our business to discover and discuss at least the most important reasons for discontent and to seek the simplest remedy. If physicians were as unsparing of their praise of C.P.S. as they are of their criticism, this committee would never have come into existence.

Some doctors have become so discontented with C.P.S. as to suggest its abolition altogether on the grounds that doctors do not belong in the insurance business. Your committee feels that such a move at this time would be a great mistake for the following reasons:

1. No one has as yet undertaken a complete and thorough study under current conditions of the operation of C.P.S. and its competitors.

2. Although the term "political necessity" has been used so often that we may seem tired of it, there is no doubt that it still exists.

3. Whether we like it or not, there is no doubt that health insurance of some sort is here to stay, and that we stand a much better chance as doctors of deciding its type and character if we have an organization of our own, whether it be large or small, than if we simply serve in the capacity of advisors to someone's else plan. We will have to admit again that C.P.S. was conceived in haste, and whether all members of the profession approve of it or not, it nevertheless has been sold to the public as the doctors' own plan. To amend this plan drastically without further study would most certainly be interpreted in some quarters as breaking faith with the public. It behooves us, therefore, to make a fearless analysis of C.P.S., and to change it if need be, but not to cast it aside until we are sure of the alternative. To quote Samuel Butler:

> "As the ancients
> Say wisely, have a care o' th' main chance,
> And look before you ere you leap;
> For as you sow, you are like to reap."

One great cause of discontent is the fee schedule. A physician who belongs to C.P.S. will find that his fee schedule has been established for him, and

that he must accept it or a percentage thereof. While it may be true that rigid discipline is needed to enforce such a schedule for C.P.S., or any other so-called service type of plan, this is, nevertheless, the biggest single cause for complaint. However, to an outsider it might appear that C.P.S. has a most schizoid personality in this matter of discipline. Because of its policy that "a doctor shall be able to practice medicine according to his usual custom," C.P.S. condones some extraordinary practices in allowing too many visits or unnecessary work. We shall cite examples presently.

Overuse of any insurance plan is sure to result in an unfair amount of benefit to some of the patients and some of the doctors. Other insurance companies are very strict about preventing such overuse. The Unemployment Compensation Disability Plan operated by the State of California, which, by the way, is not insurance for there is no relationship between the premium and the risk, and which pays out about two million dollars a month, as does C.P.S., will send a patient to another doctor for an opinion as to whether he is still ill, if they believe treatment is being unnecessarily prolonged.

Compensation insurance companies will drop doctors from their panels if the charges which they make are out of line with the average charges of other doctors for the same services, and in the closed-panel systems such as Permanente, in which the captive, or salaried, doctor is employed, the overzealous doctor is not likely to remain, while the overdemanding patient can be given the "once-over-lightly" treatment.

Unfortunately the temptation to get something for nothing influences everyone, doctors and patients alike. A few claims made by physicians, such as the doctor who put in bills for two mastectomies, both on the same side, although the patient is still double-breasted, are actually fraudulent and probably matters for the district attorney. Most unnecessary claims, however, fall into the category of conscious or unconscious bill padding. Many a doctor feels C.P.S. pays fees he thinks too low, and, therefore, if, so to speak, he refers a patient to himself, for a little extra laboratory or x-ray work, he feels entirely justified.

To show what a tremendous difference the aggregate of such minor offenses makes to the entire plan, however, one has but to take into account the fact that under the type of medical policy used until quite recently by C.P.S., 50 per cent of the money was spent on laboratory and x-ray work, being divided about equally between the two.

It is impossible to discuss any insurance plan without reference to the overuse or the great use of such facilities. In Illinois, for example, Blue Cross, which for many years advertised free x-rays as a "loss leader" to encourage people to buy its insurance, has been forced to set the over-all allowance for x-rays at $15, and that only for hospital patients. By this method they have kept from going bankrupt and are saving two million dollars a year at least. They expect to save another million as a result of this limitation, because it will no longer be worthwhile for a patient to spend three or four days in a hospital under devious diagnoses solely for the purpose of getting laboratory and x-ray work done which could just as well be done on an ambulatory basis.

Overuse of x-ray and laboratory facilities as well as too many visits and other types of chiseling, are estimated to cost C.P.S. a hundred thousand dollars a month at present. This loss is perhaps more important than it seems, for the hundred thousand dollars monthly would otherwise be divided up among the doctors who treat the plan more honorably.

Since "chiseling" proves so costly, some examples which C.P.S. felt should as a matter of policy be allowed are worth citing. One doctor made two or three visits per day to each hospital patient "because it was his usual custom." Another gave his wife three penicillin shots a week and changed the diagnosis every two or three months. A third treated a pneumonia patient every day for 90 days. There was also the case of the office nurse of an outstanding physician who marked down two or three extra visits which never really took place, because another doctor's nurse told her that was the way to increase the gross from C.P.S. patients.

Peculiarly, although C.P.S. has always had a fee schedule on which it has paid from 50 to 90 per cent of the unit value to private physicians, doctors in hospitals are not similarly circumscribed. It is strange that our own insurance plan, subsidized by physicians, should in this unusual manner, be encouraging the corporate practice of medicine, which in the state of California has been repeatedly declared as entirely illegal.

As a result of present C.P.S. policies, x-ray or laboratory work done in a hospital is paid for in unlimited amounts at unlimited prices. In one of the large Los Angeles hospitals, for example, a gastrointestinal examination, for which the C.P.S. fee schedule allows 90 per cent of $40, which is $36, was billed for $110, which C.P.S. promptly paid. Similar examples could be quoted endlessly. Your committee believes doctors, if they are to be happy, must be treated equally by C.P.S. The doctor in the hospital must not be paid an unlimited amount simply because the hospital association threatens not to honor C.P.S. cards unless hospitals can have unlimited fees for the use of the x-ray or laboratory facilities or the operating rooms.

In Washington state the problem of overuse has been solved by the use of boards of review consisting of eminent doctors. A doctor who feels he has not been granted proper consideration by the medical director of the Washington insurance plan, may appeal to the review board. In practice, of course, the very existence of such a review board cuts down about 90 per cent of the claims for unnecessary work. The review board is known for its fair treatment. It is also known for its ability to spot the chiselers.

We might do well to consider the establishment or election of a paid review board by the county med-

ical societies. Compensation as well as other insurance companies besides C.P.S. would welcome such a board, and perhaps even be glad to pay for the privilege of bringing cases before it. Great discredit is brought on any indemnity plan at the present time, for example, because a few doctors double fees on the grandiose assumption that half will be covered by insurance anyhow. Where would such a chap stand, if he knew that if he refused arbitration, a representative of the board would appear in court to present the official review board's decision, if any collection procedures were undertaken?

C.P.S., like any other so-called service plan, has always based its fee schedule on the idea that a patient had a very limited income. In the beginning, therefore, we planned to take care of only those patients who could afford minimum fees, and who, without such a plan of voluntary prepayment insurance, would have been able to pay little or nothing. Since it is traditional of the medical profession to take care of all patients whether they can pay or not, this arrangement seemed to be a logical method whereby prepayment of medical costs would benefit patient and doctor alike. Gradually over the years, however, the ceiling has crept up to the $3,600 for a single individual with $4,200 for a family, while C.P.S. most recently recommended $4,800.

There are two things about a "ceiling" which most vex the doctors. The first is that fees have not increased as much as wages and ceilings. The second is that patients resent discussing the amount of their income, and C.P.S. has never been able to find a method to make the amount of income apparent from the registration card. C.P.S. maintains that although the cards could be coded at the beginning, the status of workers changes over the years, and their wages are revised upwards. To keep pace with such changes is described as being "administratively impossible."

Although there are a multitude of plans in this country and abroad, they can easily be classified into a few types, although there are a good many mixed forms.

One type is the service plan which is under complete control of the government and pays the doctors directly on a per capita basis, and which has blossomed to complete fruition in England. In the closed-panel type of service plan, such as is promised some 300,000 people by the H.I.P. (Hospital Insurance Plan of Greater New York), or here by the Permanente plan, the physician is paid on other that the usually accepted fee-for-service basis. All of these plans have a common objection. A physician who does not work on a fee-for-service basis but on a straight salary, may be subjected to overloads which may render him inefficient and put patient care on a "lick-and-promise" basis.

California Physicians' Service is supposedly a service plan which permits an "open panel" or free choice of physicians, and pays fees for service—even though the actual fee may not be known until it is paid, because of the fluctuation in the unit value.

Another plan is one of indemnification, which has been proposed many times before the House of Delegates. The insurance companies like the indemnity plans best, because from an actuarial standpoint the risk can be calculated.

While the committee without further study does not have the temerity to suggest any one type of plan, it nevertheless believes that simplicity may be the keynote to a solution. Which type of plan you prefer depends to some extent on which side of the fence you are on. At the present time it is apparent that people who have most of the money in this country, which is to say the government and the labor unions, are anxious to have all-inclusive service plans. The patient ostensibly pays for nothing, and the government or the union, as the case may be, is allowed to handle large sums of money, much of which may logically be expected to go for large staffs of non-medical workers and other "administrative" costs.

On the other hand, many doctors are more enthusiastic for an indemnity plan. Under such an arrangement the basic cost to the patient is taken care of, and the professor may charge more than the medical student who has just received his degree. The patient is always at liberty, and should take that liberty, to ask the cost of a medical service before he engages the doctor. If he feels one doctor's price is too high, he may go to another.

It is to be hoped that this group will reach a definite conclusion at this meeting as to whether C.P.S. should undertake to mold its future along lines of the service type of plan it has now; whether it should change to an indemnity type of plan; or whether a deductible plan such as has been considered in Santa Clara County would be most suitable.

Dr. DeWitt Burnham, chairman of the Committee of Eight, which will make a fee schedule report at this meeting, calls attention to the simplicity of some of the plans which exist in Pennsylvania, New York, and Massachusetts. Up to an income limit of $2,000 in some of these plans, the patient is covered on a service basis and the fee schedules are quite low. Beyond this point the patient is on an indemnification basis. Such a plan has many advantages, among which are:

1. It protects a group of patients who would be able to pay little if anything unless they budgeted the cost of medical care in advance, as can be done by such a plan.

2. From the nature of the patient's occupation it is easily determinable by anyone whether he is under or above the ceiling—a problem which, because of the vagaries of human nature, seems almost insoluble under the present higher ceilings of C.P.S.

3. This plan is self-policing. The fee schedule is sufficiently low so there is no temptation by doctors to pad their bills. On the other hand, patients over the $2,000 income limit know they are expected to pay enough in addition to constitute a usual fee. They therefore take an active interest in the amount of the bill and do not overuse the plan. It must be clear to both patient and doctor what is covered by the policy.

Before closing, to change the subject entirely, the committee feels this House should discuss and endeavor to settle several matters of policy. If, for example, the California Medical Association Council receives a mandate from the C.M.A. House of Delegates, it must make every effort to carry out the mandate. On the other hand, in the case of California Physicians' Service, its Trustees are not obligated to abide by the decisions of the House of Delegates of C.P.S. As a result, there have been occasions in the past when resolutions of the House have been declared unworkable by the Board of Trustees of C.P.S. and discarded. There are arguments on both sides, but it is hoped that the subject will be discussed.

Another basic problem, which seems to have been overlooked by many, is the method of payment by insurance companies, including C.P.S., to doctors. In Australia, when the government decided to socialize medicine about five years ago, the doctors agreed that the government could subsidize the patients as much as it liked, but that they would continue to collect their bills directly from the patients, which they still do to the satisfaction of all but the Socialists, who are now no longer in power. In England the government pays the doctors directly, and the results are all too well known to you. We may well ask ourselves whether our model plan is setting a proper pattern making direct payments to physicians. It may seem simpler, but is it a dangerous example?

We have recommended that a considerable amount of money be expended to have independent business experts analyze C.P.S. and its competitors. Without such an analysis the committee can only speculate whether C.P.S. is running efficiently. Some information has reached us to the contrary, but we feel that all comments on the internal affairs of C.P.S. must be withheld unless or until the California Medical Association through this House of Delegates votes to grant the necessary funds for a complete examination.

SUMMARY

1. Your committee feels that for a complete survey of the business methods of C.P.S. and its competitors, as well as an up-to-date analysis of the reactions of patients and doctors, it would be necessary to use one of several groups of business analysts. Preliminary bids from two such groups are alike in indicating the cost would be $30,000 to $40,000. Both the committee and the Council believe the opinion of this House should be asked regarding such an expenditure.

2. In the meanwhile, the House can do much to determine matters of policy, which will guide this committee.

3. We have felt this preliminary report, much of which is informatory, would serve the purpose of indicating to this House some of the thoughts of the committee and would enable us to obtain further suggestions for action from the membership.

4. We urge no radical change shall be made in the policy of C.P.S. until our committee is able to make a report based on a thorough study. (Applause.)

SPEAKER CHARNOCK: This report will be referred to Reference Committee No. 1.

I think I will now turn the meeting over to the Chairman of the Committee on Scientific Work, Dr. Albert C. Daniels.

. . . Presentation of scientific papers. . . .

SPEAKER CHARNOCK: We owe a great debt of gratitude to both Dr. Starr and Dr. Hinshaw for their presentation today.

I have been informed by the Secretary that there is no unfinished business. We come now to new business in which resolutions may be presented and those presenting resolutions will please come to the rostrum and give your name and county.

DR. J. E. YOUNG (Fresno): I am from Fresno. I presume this comes under the heading of new business.

Resolution No. 1

I have here a petition from a group of physicians of Madera County. This letter is dated November 30, 1951, addressed to "Members of the House of Delegates, California Medical Association," and it reads as follows:

Gentlemen:

We, the physicians of Madera County, petition for a Charter for a Madera County Medical Society. We request a local society for the following reasons:

At present our members are split between the Fresno and Merced County Chapters and with the tremendous increase in the population of doctors and the population in Madera County, a more unified group would be possible under a local County Chapter. Secondly, the public relations and control and medical policies in this county can be handled much better by a local group.

Respectfully submitted,

Then there is a section here of about 12 names of practicing physicians in Madera County. I have also a copy of their proposed constitution and by-laws and also a copy of their proposed budget for the following year. This petition has been given to me to present to this House of Delegates because the members in Madera County are at present members of the Fresno County Society and I am presenting this in the interest of the physicians of Madera County, Mr. Speaker.

SPEAKER CHARNOCK: Thank you, Dr. Young. That will be referred to Reference Committee No. 3. Dr. Loos!

DR. H. CLIFFORD LOOS (Los Angeles): I have a resolution for a change in the By-Laws regarding Interim Sessions.

Resolution No. 2

. . . The resolution, not read to the House, is as follows:

I move that the By-Laws of the California Medical Association be amended as follows:

That subparagraph (a), of Section 7, of Chapter V, of the By-Laws of the California Medical Associa-

tion be and is amended by substituting a semicolon for the period now present at the end of the single paragraph and adding thereafter the words: ". . . .: provided, however, that the Interim Session shall not be held, in any year, unless the Council shall, in its discretion and by the majority vote of its members, determine and declare the need therefor."

Thus, subparagraph (a) of Section 7 of Chapter V as amended shall read as follows:

(a) In each year there shall be two regular sessions of the House of Delegates; the time and place of such sessions to be determined by the Council as far as possible in advance and notice thereof published in the Journal of the Association. One of these sessions shall be held in the first six months of each calendar year and is designated the Annual Session; the other shall be held in the last six months of each calendar year and is designated the Interim Session; provided, however, that the Interim Session shall not be held, in any year, unless the Council shall, in its discretion and by the majority vote of its members, determine and declare the need therefor.

SPEAKER CHARNOCK: This resolution for changing of the By-Laws will have to lie on the table until April. In the meantime it will be referred to Reference Committee No. 3.

Dr. Shipman!

DR. SIDNEY J. SHIPMAN: Mr. Speaker. I have two resolutions to be presented on behalf of the Council.

Resolution No. 3

Resolved, That Section 2 of Chapter V of the By-Laws of this Association, the California Medical Association, is hereby amended to read as follows:

"Commencing with the 1952 Regular Session of the House of Delegates, each component society shall be entitled to one delegate for each 50 active members or major fraction thereof, according to its membership as of the first day of November of the preceding year; provided, however, that each component society shall be entitled to a minimum of two delegates."

Resolution No. 4

Resolved, That Section 9 of Article III of the Constitution of this Association, the California Medical Association, is hereby amended to add the Vice-Speaker to the membership of the Council, so that said section shall read as follows:

"The Council shall consist of:

"(a) Eleven District Councilors elected from the Councilor Districts specified in this Constitution; and

"(b) Six Councilors-at-Large elected by the House of Delegates; and

"(c) The President, President-elect, Speaker, and Vice-Speaker.

"In addition, the Secretary-Treasurer and Editor, ex-officio, but without the right to vote."

SPEAKER CHARNOCK: Dr. Shipman's proposed constitutional amendment will have to lie on the table for one year.

Dr. Lambertson!

Resolution No. 5

DR. E. R. LAMBERTSON (Los Angeles): I have a resolution to present:

WHEREAS, The original purpose of the California Physicians' Service was to explore, test and otherwise act as a pilot plan in prepaid health programs for low income groups and/or individuals; and

WHEREAS, In reality California Physicians' Service has become a prepaid health plan for many who have high incomes to the financial detriment of the medical profession; and

WHEREAS, The management of the California Physicians' Service is in fact no longer representative of the viewpoint of the medical profession at large; therefore be it

Resolved, That this House of Delegates recommend to the Administrative Members of the California Physicians' Service that such members approve a change in the By-Laws of California Physicians' Service which will provide that resolutions passed by the Administrative Members of the California Physicians' Service shall be mandatory upon the Board of Trustees and officers of California Physicians' Service, and that such resolutions shall be placed into operation and administered as recommended by the Administrative Members.

SPEAKER CHARNOCK: That will be referred to Reference Committee No. 3.

Dr. Gibbons!

Resolution No. 6

DR. HENRY GIBBONS III (San Francisco): This is a resolution to classify approval of the different forms of sickness or health insurance.

WHEREAS, Free choice of physician maintains a normal state of individual and private enterprise for both patient and physician; and

WHEREAS, Competition on the basis of individual physicians involved in any free choice system offers the greatest stimulus for proficiency; and

WHEREAS, The medical profession has accepted and is sponsoring the right of people to use voluntary insurance or other voluntary collective methods to defray the cost of medical care; therefore be it

Resolved, That the House of Delegates of the California Medical Association instruct the Council of the California Medical Association to set up a Board of Approval of voluntary sickness and health insurance; and be it further

Resolved, That the classes of voluntary sickness or health insurance or plans shall be A, B and C; and be it further

Resolved, That Class A shall consist of those forms of health insurance policies, or plans, that permit free choice of physician and are able to furnish service or indemnity according to a schedule that will fulfill its claims; and be it further

Resolved, That Class B shall be those forms of health insurance policies, or plans, that do not give free choice of physician but do fulfill the other tenets in Class A; and be it further

Resolved, That Class C shall be those forms of insurance policies, or plans, that neither give free choice of physician or fulfill the tenets set forth in Class A; and be it further

Resolved, That an insurer, group or plan seeking classification must apply for approval, furnish all necessary information and agree that approval may be withdrawn if it is shown that there was misrepresentation in the application, or that there were changes made during the time of approval that make the facts requisite to approval contrary to what they were at the time of approval; and be it further

Resolved, That free choice of physicians be defined as that degree of freedom in choosing a physician which can be exercised under usual conditions of employment between private patients and physicians.

Resolution No. 7

The other resolution is on voluntary indemnifying medical expense insurance.

WHEREAS, There are many indemnifying insurance policies for medical and surgical benefits in the state of California; and

WHEREAS, Indemnifying insurance for medical costs does not regiment practice and offers free choice of physician; and

WHEREAS, Indemnifying insurance makes an amount of money receivable according to a fixed schedule but does not bind the physician to work for said schedule; and

WHEREAS, Medical guidance is being sought in the field of indemnifying schedules and other operative procedures of indemnifying insurance on large employed groups; and

WHEREAS, Abuses of this form of voluntary health insurance can obstruct its proper operation and continuance; therefore be it

Resolved, That the House of Delegates of the California Medical Association approve voluntary indemnifying insurance as a sound and excellent method of distributing medical and surgical costs; and be it further

Resolved, That the Council of the California Medical Association be instructed to be prepared as follows:

(1) To advise insurance carriers, employed groups and others on comprehensive indemnifying schedules.

(2) To advise such groups on the ill effects on attempting to eliminate the free choice of physician.

(3) To advise these groups on the fact that final fees are fixed, not on the indemnifying schedule, but on agreement between the patient and physician.

(4) To advise them that all grievances regarding possible abuses in these indemnifying policies should be referred to local medical society professional conduct committees for arbitration or advice.

SPEAKER CHARNOCK: Thank you, Dr. Gibbons. Both of these resolutions will be sent to Reference Committee No. 3.

Resolution No. 8

DR. D. M. CAMPBELL (San Francisco): I am Dr. D. M. Campbell from San Francisco and I have a resolution to present:

WHEREAS, There are at present 867,000 people over 65 years of age in California, and in 1975, it is estimated there will be approximately two million; and

WHEREAS, This absolute increase will create a serious situation, both medically and economically in California; therefore be it

Resolved, That the California Medical Association establish a special committee to study and develop a positive program dealing with "The Problem of the Aging."

SPEAKER CHARNOCK: This resolution of Dr. Campbell's will go to Reference Committee No. 3. Dr. Magoon!

Resolution No. 9

DR. LESLIE B. MAGOON (Santa Clara County):

WHEREAS, Hospitals are showing increasing eagerness and determination to appear to the public as dispensers of medical as well as hospital care; and

WHEREAS, Hospitals are using their control of beds and other hospital facilities as a means of accomplishing this and by regimenting and controlling physicians and censoring the practice of medicine; and

WHEREAS, Such regimentation and censorship constitute the indirect, but nevertheless the definite, practice of medicine by a lay corporation, an unlawful act; and

WHEREAS, Such regimentation and censorship represent also a superimposed, extralegal restriction of the rights, privileges and responsibilities conferred on licensed physicians, and only on licensed physicians, by the Medical Practice Act of the State of California, and result in arbitrary restriction of the right of licensed physicians to practice medicine limited only by their skills, their ethics and the law; and

WHEREAS, Exclusion of licensed doctors of medicine from the use of hospital facilities results in sharp limitation of the right of a patient to choose his own physician without reference to the opinions, desires or prejudices of a third party, the hospital; and

WHEREAS, Hospitals are largely built and financed by donations from the general public, and, by accepting such donations, become morally bound to provide hospital facilities so that any member of the community may be cared for by the physician of his own choice; and

WHEREAS, The public welfare will be better served by the maintenance of hospital facilities open to all legally licensed physicians and surgeons than by any fancied improvement in medical care resulting from regimentation and censorship of physicians by hospitals, and the illegal assumption by hospitals of medical as well as domiciliary functions; now therefore be it

Resolved, That the Legislative Committee of the California Medical Association be directed to press for the enactment of legislation which shall require that, for privately-owned hospitals to be eligible for tax exemption as non-profit institutions, their facilities shall be open on an equal basis to every doctor of medicine, licensed as a physician and surgeon by the Board of Medical Examiners of the State of California, subject only to such reasonable rules and regulations for practice within the hospital as the organized medical staff of the hospital shall adopt, such rules and regulations to be equally and fully applicable to all members of the medical staff without limitation, without regard to race or color, and without classification affecting hospital privileges.

SPEAKER CHARNOCK: That will go to Reference Committee No. 3.

Dr. Carson!

Resolution No. 10

DR. DONALD A. CARSON (San Francisco):

WHEREAS, Because of abuses of coverage for diagnostic services in cases of sickness while hospitalized, Blue Cross organizations have found it necessary to police such services strictly; and

WHEREAS, X-ray and laboratory examinations are diagnostic in nature but are also essential to the care of the sick; and

WHEREAS, This strict policing by Blue Cross has frequently and increasingly resulted in denying coverage for diagnostic services in legitimate cases of illness while hospitalized; now therefore be it

Resolved, That the Council of the California Medical Association request Blue Cross organizations to clarify their attitude as to coverage for diagnostic services in cases of illness while hospitalized in the hopes of removing uncertainty from the minds of policyholders and their physicians.

SPEAKER CHARNOCK: Thank you, Dr. Carson. That will be referred to Reference Committee No. 3.

Dr. Bailey!

Resolution No. 11

DR. WILBUR BAILEY (Los Angeles): This is an enabling resolution:

Resolved, That the Committee of the California Medical Association to Study California Physicians' Service shall on an emergency basis, if necessary, be granted not to exceed $40,000 as requested in its report to enable the employment of expert business consultants to aid in the study of C.P.S. and its competitors.

SPEAKER CHARNOCK: Because of the financial aspect of this, it will be referred to Reference Committee No. 2.

Do you have any more resolutions? If not, I have two announcements to make.

. . . Announcements. . . .

SPEAKER CHARNOCK: Is there anything more to come before this body? Hearing nothing, the Chair will declare a recess of the House of Delegates until 9:30 tomorrow morning. The Administrative Members of the California Physicians' Service will meet at 1:30 in this room this afternoon.

A MEMBER: I move that the assembly take place at 2:30 instead of 1:30.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: I am afraid that the motion is out of order because Dr. Cass has asked specifically that the meeting start at 1:30 but with the approval of Dr. Cass it will be made at 2:00 o'clock.

. . . The session adjourned at 1:00 p.m. . . .

SUNDAY MORNING SESSION

December 2, 1951

The Sunday morning session of the Interim Session of the California Medical Association of 1951 was called to order at 9:45 a.m., Sunday, December 2, 1951, by the Vice-Speaker, Dr. Henry A. Randel.

VICE-SPEAKER RANDEL: Delegates, will you please be seated.

Is the chairman of the Credentials Committee, Dr. Wells Cook, ready to report?

DR. COOK: Mr. Speaker, there is a quorum present and all members of the quorum have complied with the signing of the loyalty oath.

VICE-SPEAKER RANDEL: A quorum, apparently, being present, the Chair considers the House duly constituted and ready to proceed with the business before it. This is a reconvening of the meeting adjourned yesterday. The first order of business will be the roll call. Dr. Daniels!

. . . The roll was called by the Secretary, Dr. Daniels. . . .

. . . Speaker Charnock then assumed the Chair. . . .

SPEAKER CHARNOCK: The next order of business is the Reports of the Reference Committees. We would like to ask for the report of the chairman of Reference Committee No. 1.

REPORT OF REFERENCE COMMITTEE No. 1

DR. E. R. LAMBERTSON: Mr. Speaker, Members of the House of Delegates: Our committee has studied the report given on the work of the Council as presented by Sidney J. Shipman, chairman of the Council. We feel a great deal of time, diligence and work has been well reviewed. This committee feels that the excellence of the report speaks for itself and no further comment is necessary. We wish to present this report for acceptance as a whole.

Mr. Speaker, I move the approval of this section of our report.

SPEAKER CHARNOCK: Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we receive this section of the report. Are you ready to vote on the motion?

. . . The motion was put to a vote and it was unanimously carried. . . .

DR. LAMBERTSON: Section 2.

Our committee considered the oral report presented by Dwight L. Wilbur, Editor of CALIFORNIA

MEDICINE, who also appeared in person before the committee.

The committee recommends the following resolution:

Be It Resolved, That the Editorial Board be requested to contact the Student A.M.A. groups in this state to determine their desires and interests in participating in a page in CALIFORNIA MEDICINE to be devoted to the affairs of medical students; and be it further

Resolved, That should the Editorial Board find there is not sufficient interest to warrant the preparation and effort of such a page, these facts should be reported at the next meeting of the House of Delegates in April, 1952.

Mr. Speaker, I move the adoption of this section of our report.

SPEAKER CHARNOCK: Do I hear a second to that?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: Are you ready for the motion?

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is carried.

DR. LAMBERTSON: Section 3.

Our committee carefully reviewed the preliminary report of the C.M.A. Committee to Study California Physicians' Service, as presented by Wilbur Bailey, chairman of that committee.

Inasmuch as this report is preliminary and tentative, our committee feels at this time action is unnecessary other than to commend the committee and its chairman for their diligence.

Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we receive this section of the report.

. . . The motion was put to a vote and it was unanimously carried. . . .

DR. LAMBERTSON: Mr. Speaker, I move the adoption of the report as a whole.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we receive the report of Reference Committee No. 1 as a whole.

. . . The motion was put to a vote and it was unanimously carried. . . .

SPEAKER CHARNOCK: It is received.

As you know, we are operating under the new Constitution and numerous difficulties have come up with the Reference Committees. I am going to ask legal counsel to tell you some of the problems that the Reference Committees are having at this time so that it may clearly bring you up to date on what our new Constitution is like. Mr. Hassard, will you discuss this problem?

MR. HASSARD: Mr. Speaker, Members of the House, and Delegates: The primary problem arising under the new By-Laws in the handling of Reference Committee work arises from two sections. They are quite different in their context from the previous sections in the previous By-Laws dealing with the introduction of resolutions. There is a referral to Reference Committees and they report back their action to the House.

So that the House will understand the mechanical procedure that must be followed now under the By-Laws, I will first read to you the two particular sections involved and then comment on them briefly. The first one is Subsection (c) in Section 7 of Chapter V which deals with the House of Delegates and its functions. This section is as follows:

"Resolutions and other new business may be introduced at either regular session but shall not be acted upon until the next regular session; provided, however, that any resolution designated as an emergency measure may be acted upon at the session in which it is introduced, but shall require a two-thirds affirmative vote for adoption."

I think I might state that the words "Session" and "Regular" used in that section that I have just quoted refer to the Annual Session which is to be held in the spring of each year and to the Interim Session that is to be held in the winter of each year —and at this time your Convention is in the first of said Interim Sessions.

The next section that governs the procedure to be followed on resolutions is in Section 9 of the same chapter and that specifically spells out the duties of each of the Reference Committees. It is as follows:

"Each Reference Committee shall prepare a written report dealing with and making recommendations on all matters submitted to it. In those instances in which resolutions or other matters remain before the Reference Committee between meetings of the House of Delegates, copies of such resolutions or other matters and the recommendations of the committee thereon shall be mailed or delivered by the Secretary to each elected delegate and alternate at least thirty days . . . prior to the meeting of the House of Delegates at which such resolutions or other matters and recommendations concerning them are to be considered. . . ."

In reading this I eliminated some material in parenthesis that permits recommendations of Reference Committees and that copies of the resolutions are to be mailed no less than thirty days in advance if there is an interval between meetings of less than thirty days.

In substance the two sections that I have read contemplate this: That the ordinary business of the House will require two sessions to complete; that is, that an ordinary resolution may be introduced at either of the sessions held in each year; that it would then be considered by an appropriate Reference Committee between that session and the next following, giving an interval of time for each Delegate to consider the resolution and to appear before the Reference Committee or make such presentation to the Reference Committee as he desires; also to permit each member of the Association to have an opportunity to know what is being considered by the House of Delegates before it is acted upon. Then

the Reference Committee would report back at the next session and the House would then vote.

In order to prevent the House being unable to act fast, if fast action is essential, a qualifying clause that a resolution may be acted upon as an emergency is included. That clause does not spell out the technique or procedure to be followed by the House in acting upon an emergency measure.

Therefore it will be necessary for the Speaker, if, as and when an emergency measure is presented, to interpret and construe the section. It will be necessary to do so by analogy because of the absence of detail. There is an analogy and that is the functioning of our State Legislature. We have in our State Constitution a provision that the Legislature may act immediately upon any bill before it, if it is an emergency measure. To be an emergency, it has to have a two-thirds vote.

The Legislature proceeds this way. The author of the bill includes a declaration of the emergency in his bill. The House then votes on that declaration. If it passes by a two-thirds vote, then the subject matter, the bill itself, is before the House and it is voted upon. I believe that that procedure is the most logical to be followed here; that if any matter is presented as an emergency, you must first vote on whether or not to designate it as an emergency. You do not vote to pass or defeat the resolution but you vote upon the question of whether it is or isn't an emergency. If it receives a two-thirds vote, you then vote on the resolution which would also require a two-thirds vote. If you fail to declare it an emergency by a two-thirds vote, it is obvious that the resolution itself wouldn't pass as it would not then be before the House and it would follow the ordinary course and come back to the House for action at the next session as a part of the Reference Committee Report and the committee to which it is referred.

If there are any questions I will be glad to try to answer them. I have just endeavored to cover the procedure the best I can.

Speaker Charnock: That problem has caused considerable difficulty in the Reference Committee and if any of you are not clear about it, I should like to have you ask Mr. Hassard questions now so that we can get it cleared up. With that in mind, if there are no further questions about this procedure, we will call for the Report of Reference Committee No. 2. The measure that was sent to Reference Committee No. 2 was the proposition of providing money for the Study Committee. When it was introduced it was designated as an emergency by the proposer. With the procedure that is carried on in our Legislature I will now ask for a motion to make the Report of Reference Committee No. 2 an emergency measure.

Dr. Bailey: I so move.

. . . The motion was seconded. . . .

Speaker Charnock: It has been moved and seconded that we make the report of the Reference Committee No. 2 an emergency measure. This will require a two-thirds vote.

Dr. Bailey: I so move.

. . . The motion was seconded. . . .

A Member: Does this mean that the whole report of the committee be considered an emergency measure or only that resolution that the committee is to present as an emergency?

Speaker Charnock: It so happens at this time that there is just one measure. It only has this one measure to deal with. We will vote then whether or not to consider the report of Reference Committee No. 2 as an emergency.

. . . A vote was taken on the motion, and it was carried. . . .

Speaker Charnock: It is carried and it is considered as an emergency. We will now have the report of Reference Committee No. 2, Dr. J. Norman O'Neill of Los Angeles.

REPORT OF REFERENCE COMMITTEE No. 2

Dr. J. Norman O'Neill: Mr. Chairman and Members of the House of Delegates: Happy days are here again. I plagiarized that from one of my friends. I love that word "emergency." That came on in 1932 I think and we have been using it ever since so I am all for it. I am also for this resolution. I also believe that we are living in an age not only of emergency but we are also living in an age of large appropriations and investigations and I am all for that too.

I don't believe that the funds of the California Medical Association can really be considered as money any more than the funds of the Federal Government. It is just so much cash that is there that doesn't belong to you. It doesn't belong to me. We might just as well throw it around and do a little investigating with it.

I know of no way that I could make my name more of a household word in every medical home in California, like Senator Kefauver, than to announce an investigation. While they were shooting each other on the steps of the court house in Polk County, which is Senator Kefauver's bailiwick, he was out here investigating the bookies in Los Angeles. So I don't see anything wrong with investigations. I think that we should make them more popular. You can get your name before the public. On the radio about a month ago it was announced that Bing Crosby had just had an operation, and Bob Hope was interviewing him. He said, "Bing, tell us about your operation. Did you have a surgeon, or did Senator Kefauver look into you?"

You know, after I attended that lovely Poinsettia Ball last night and got sufficiently relaxed and sat down in a smoke-filled corner, I said to myself, "I wish I were a young man again and I wish that I had plenty of money. I would rise to the presidency of the A.M.A. in about three years and I would do it not only by starting here at home in investigating California Physicians' Service but I would investigate every single voluntary health insurance plan in America. I would have 90 per cent of the

doctors behind me." I think it would be a good healthy thing to do.

I think that we should do something with these voluntary health insurance plans. I think they all need improvement. I believe that possibly at the end of my objective I would have socialized medicine in America but I could attain my objective.

I was in Denver at six o'clock yesterday morning but since I have been here I have heard some rumors. I suppose my short term on the Board of Trustees of the California Physicians' Service has made me more susceptible; at least I hear more rumors that I used to hear. Among those rumors was, one, that Ransom Cook was retiring from the California Physicians' Service because he was so disgusted with the way things were happening there and that the Board of Trustees and everybody else was wrong. Well now, for a small stipend—and I don't like to sound mercenary—but an additional appropriation of $5,000 I will investigate that rumor and bring you in a report before four o'clock this afternoon.

I also hear that Mr. Hamman, who draws a salary of $1,000 per month from California Physicians' Service, would be afraid to bring in an unbiased report because his livelihood is dependent upon his income from California Physicians' Service. Of course, no one would want to bite the hand that is feeding him. Well, I don't suppose that Mr. Hamman would be afraid to step up here and tell you another rumor that I have heard. I have heard from some very excellent authority, but it does bear investigation and probably we could have this investigated too, that Mr. Hamman is not a $1,000-a-month man. Mr. Hamman, after making three million dollars, or four million dollars in the advertising business, saw fit to retire and sell out about 1929. Since then it has been his hobby to go in on a purely impartial basis and take over some defunct business and see what is wrong with it, to see whether it should be closed up or whether the head of the organization should be fired and somebody more competent gotten in there to take over, or just what to do. Then he moves on to the next place. Well, to me that throws a little bit different light on whether a man is entirely dependent upon C.P.S. for a livelihood or not.

These are just interesting comments that I thought you would like to have. I might say, too, that I was in an unusual position here when Dr. Charnock called me and asked me to be the chairman of this committee. Of course Don, with his usual smooth sales talk, said, "It is just one of those committees where there isn't anything to do and you go ahead and take care of it." So then I accepted it on that basis and I am very happy to have done so.

If I were to talk to you as a member of the House of Delegates, I would have one viewpoint. As a member of the Board of Trustees of the California Physicians' Service, I would naturally be entitled to another viewpoint, and I certainly wouldn't be anything other than wholeheartedly in favor of an investigation because you would all be more vocal and eloquent in your desires to have California Physicians' Service investigated and feel there was something wrong if my feelings were anything other than that.

Reference Committee No. 2 consisting of Carl Howson, Hollis L. Carey, and J. Norman O'Neill, chairman, submits the following report on the resolution that was introduced by Dr. Wilbur Bailey of Los Angeles. This resolution reads as follows:

Resolved, That the Committee of the California Medical Association to study California Physicians' Service shall on an emergency basis, if necessary, be granted not to exceed $40,000 as requested in its report to enable the employment of expert business consultants to aid in the study of California Physicians' Service and its competitors.

The committee recommends the amendment of this resolution to read as follows:

"*Resolved*, That the Council be, and is hereby authorized to appropriate on an emergency basis funds for the use of the Committee of the California Physicians' Service in a total amount not to exceed $40,000 as requested in its report for the employment of expert business consultants to aid in its study of California Physicians' Service and its competitors."

Mr. Speaker, I move the adoption of this report.

SPEAKER CHARNOCK: Do I hear a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt the report of Reference Committee No. 2 and it is now open for discussion.

DR. LEON O. PARKER (San Francisco): We are a little confused. We are a little confused by some of the terminology that has been used by the committee and some of the terminology used at the session yesterday and also by the terminology that Dr. Bailey used himself. The Speaker, I believe, spoke of the portion of this committee's report that had to do with an appropriation to study or investigate California Physicians' Service. The last speaker mentioned the same appropriation and discussed the question of investigation of California Physicians' Service. I can't quote Wilbur's [Bailey] resolution of yesterday exactly but I believe that it had to do with investigating California Physicians' Service and other forms of health plans and voluntary health insurance. May I ask that Dr. Bailey's resolution dealing with such things be read?

SPEAKER CHARNOCK: You have the original report there and you read it, will you, Dr. O'Neill?

DR. O'NEILL: The Committee to Study California Physicians' Service was appointed as a result of the following resolution of California Medical Association:

"*Resolved*, that the Council of the C.M.A. be urgently requested to appoint a representative committee to ascertain the expectations of the medical profession of California in regard to C.P.S. The function of this committee shall be to make a careful study of C.P.S. as related to the operations of pri-

vate insurance companies and other prepaid medical care groups, and to determine the future role and purpose of California Physicians' Service in the whole field of voluntary prepaid medicine."

DR. PARKER: I am perhaps in error in the text of the original resolution. I would therefore choose to say that in hearing some of the work of this committee or some on it that it was my impression that they were expected to study other insurances in such a way that they could further advise or we would further see California Physicians' Service in its relationship to its competitors. Therefore I would say that if we are going to appropriate this money that we should invite a study and such an investigation.

California Physicians' Service is investigating itself by the very capable parties that we heard speak yesterday. That is important. It seems to me, and it has been discussed in many quarters, that in spending this money we should make sufficient study to evaluate all of California Physicians' Service's competitors on the street. That means that all other forms of voluntary health insurance or plans must be considered and studied.

SPEAKER CHARNOCK: I think that was the intent and scope of the committee and I am sure, in talking with Dr. Bailey and with other members of the committee, that is what they had in mind.

Do we have any more discussion upon the report of Reference Committee No. 2 which is to enable the Council to spend a lot of money?

Dr. Bailey, do you wish to speak on this?

DR. BAILEY: I think probably we should raise a few of the questions that came up in the Reference Committee and tell what we have in mind a little bit more so that when you people go home you will remember them and have a better idea of what is going on. After all, as the song goes, "So I took the $50,000," and the people will want to know where that money has gone.

We have had a bid from several different companies. This is no unusual thing, to investigate a business of any sort. A good many businesses go on and somehow don't make money so you have someone come in who knows much more about corporate finance and how a business should be operated than we do and put it on a paying basis or put it on a paying basis where there is a sales increase. In our case it is not so much sales to the people but it is sales to the doctors. That has been our biggest problem. We are extremely anxious to have them feel that we are on an objective basis. We don't want them to feel that whatever I say is considered as just another doctor talking but someone who has made a complete study. We don't promise any cure. We may not have an answer, but it will help a great deal. We don't like to spend the money but we don't think unless we do that we are really doing a good job.

If you were to psychoanalyze the members of the committee, I think you would find there is a sort of hope underneath all of this that you won't make the appropriation so that will give you a good many spring week-ends to spend somewhere else besides the conference room. As a matter of fact, the committee was not completed until the last several months, simply because it was hard enough to find enough suckers to take the job. We feel this, that California Physicians' Service has made a weedlike growth and anybody that has had any experience in seeing things rise at such a rapid rate will realize this.

I think most of you during your army days saw how much was accomplished and how much waste there was that went along with it. Well, perhaps C.P.S. is doing the same thing and we should retain Mr. Hamman. Perhaps there are some practices that they have that could be looked into by way of cutting down costs of operation. Perhaps we will find there is some practice that we ought to have that will raise the cost of operation.

We don't know without looking into it. For example, I have talked to people that are interested in this sort of thing and that was while I was in Philadelphia, New York, Boston and Chicago, as well as representatives from a good many other places. One of the opinions I got was that we have an extraordinary system for price fixing. A bill comes in and it is looked over by a nurse. She has about two hundred cases a day. She decides what the price should be and that is coming out at the rate of one about every five minutes. Well, you might think, after you had been in a job for a while, that you would know what was the standard price for a tonsillectomy or an appendectomy and that you would be able to do that in less than five minutes. Exactly twenty per cent of the cases were turned over to a supervising nurse for pricing and then, especially if they were wrong, they went over to an auditor to make sure they were right and then beyond that, of course, if they are difficult cases, they come to the attention of the Medical Director. That is not a plan that is followed everywhere and it is mostly done in two steps. Maybe it saves money and maybe it is a very necessary thing—I don't know; I can't tell you, but I would say that looking inside C.P.S. we would also want to look inside a few other plans to make sure how they are working. That is the reason we spoke of competition.

Another reason for looking at competition is to try to get our men, our doctors in California accustomed to the idea that if they don't have C.P.S. they are going to have something else and let us take a look at that something else. There is no argument against the fact that if you don't have what you have, competition will have something else.

The managers of C.P.S. are by no means stupid. They know in many instances that the doctors don't care for it. They have right now 32 physician relationship employees who made some 1,200 calls in the last nine months. You heard Dr. Cass say that yesterday. They are doing all they can. Whether they can do as much as somebody from the outside, I am not sure but if you want to talk about prices let's say that each of those 32 employees gets $10,000 a year. That makes $320,000 spent and that amount would make $30,000 to $40,000 look pretty small.

They don't get $10,000 but even if you cut that in half or thirds or quarters, it still gives you a good idea of what they are doing and what they propose to do.

How do we propose to do it? We are going to get someone who is a specialist very like Mr. Hamman and we are going to get all we can out of Mr. Hamman's brain. The part of the committee that lives in the north, and they don't know it, are going to be called upon to call on Mr. Ransom Cook, who I think made one of the best talks that this House ever had here yesterday, and we are going to ask him for any suggestion he may have. He had several very good ones. Then we are going to go beyond that and get four or five experts in various directions working under this business consultant. Mr. Preston we thought of and if we don't get Mr. Preston we are going to put all of these people, including two or three clerks, right on the C.M.A. payroll and keep them there just as long as we need to. If we don't need to get up to the $40,000, we certainly won't but we want to have enough money so that we can be sure about it.

We have quite a job here and we hope that we can get it all out by April. To do that, you have to spend money. We hope in the meantime that there won't be any drastic changes in policy by the C.P.S. It would seem to be a breach of faith if there were changes made in the contract while we are working on suggestions as to what might be done.

One of the things we are thinking about, in selecting someone to help us, is someone that won't come back next year. If you have someone that wants to come back they will be inclined to soft-pedal. I think that if they saw fit they ought to fire the President and all the Trustees, including the General Manager, if they want to and so for that reason we want to have someone who will come just once and that is all.

I don't know how we can get an impartial objective study by the members of the Association from doctors who don't even open their mail but if you sent out a notice of an anonymous election, you will find out that they read their mail all right.

We propose to bring out in our final report something that will be written like the *Reader's Digest*, you know, condense the Ten Commandments down to the best seven. Then we plant to print it in heavy print so that anybody can read it and so that it can be read in about the time it takes to read the evening newspaper. Along that line we intend to have a little explanatory paragraph at the beginning that it will take about as long to read the next report as it does the *Saturday Evening Post*. Then we are going to have a third set of figures and this will be the set of figures for anyone to read who is really interested in reading it.

Then after we get all of that done, in order to make sure they will read it, we think the best plan would be to take it before the various women's auxiliaries and when the doctors hear that their wives know more about it than they do, they will read the report.

Speaker Charnock: Thank you, Dr. Bailey.

Dr. E. Vincent Askey (Los Angeles): Mr. Speaker, Ladies and Gentlemen of the House: The problem before us assumes a little bit of a complex character. Actually, this thing is rather simple, gentlemen. The last House of our Delegates passed a resolution asking that an investigation be made. This committee has not had time to examine yet and report to you. We have merely heard a preliminary report. The whole question then before you now is as to whether you wish what you already voted on, that it be done; whether you want it implemented or not. The committee chairman, Dr. Bailey, says that his committee cannot do a job without implementation by funds. The Resolutions Committee has recommended that that be given. I think we will save the time of this body if we request having this investigation made. If you don't, we don't need to talk any further. You can revoke your original resolution. If you don't do that, then I think we should give this money for that purpose and have it carried out and any argument that we might make here today won't have much to do with it because none of us knows much about it. We want to find out about C.P.S. I think that without too much discussion, if we will only remember these two things that we have to consider; do you wish to have it done and, if you do, will you give the money. I don't think we will get it unless we keep to the subject on which we are discussing, Mr. Speaker. (Applause.)

Speaker Charnock: Does anyone else wish to discuss this report?

Dr. Ralph Teall (Sacramento): It seems to me we have jumped clear off the track. I strongly favored this resolution at the spring session in what I understood then to be the purpose and the price. I was very much surprised at the tenor of the meeting here yesterday and the remarks made by Dr. Shipman and Dr. MacLean. There has been a great deal of locker room discussion. It seems to me that in effect they were saying, "For God's sake, boys, don't kill C.P.S." It seems to me they were scared to do that but somehow or other that is what was proposed. It doesn't seem to me it was proposed at all. It seems that Dr. O'Neill has adopted somewhat the same attitude. It seems to me that even in the last few minutes Dr. Bailey has adopted the same attitude. Yesterday I was much impressed by the preliminary remarks made by Dr. Bailey and then he came down to what is expected of C.P.S. and of the doctors of California which will determine the future role and purpose, the purpose of health insurance in California.

This investigation has nothing to do with this. These points weren't touched on in any discussion yesterday. An investigation of the business policies of C.P.S. was not in the original resolution as I see it.

It seems to me that we are so far off the track that we better get back and see where we started from. We started to find out what is expected of the California medical profession for C.P.S. to perform in

the total field of health insurance. That is an entirely different thing from these deep inner workings of the business of C.P.S. and that is the sort of thing that Mr. Hamman has been employed to do. I see no reason to duplicate that.

I therefore would strongly urge that the committee that Dr. Bailey has headed would take another look at what they are supposed to be doing. In the resolution at hand all we are proposing to do is to say to the Council, "Go and spend the $40.000 if in your judgment it seems to be worth spending." As a matter of fact, we have not anything to do with whether they spend it or not. The Council appropriates the money and we can pass the resolution without saying in effect that Dr. Bailey must conduct this sort of punitive or punishment type of investigation that seems to be coming out this morning. We must know where C.P.S. stands in relation to voluntary commercial health insurance. We must know what the doctors want to do in relation to voluntary insurance of private commercial carriers. Do we want carriers such as Mr. Cook talked to us about yesterday? What is the role that C.P.S. should take in the whole general field?

I don't see why $40,000 should be spent by these business consultants to find out these things and yet that is exactly the tenor and the import of the original resolution. In order to clear the matter, I believe we should go right ahead and continue the committee. They could spend some money, we could give the committee some money but I certainly would feel that the Council should better look at what the money is being spent for. (Applause.)

SPEAKER CHARNOCK: Thank you, Dr. Teall.

Dr. Doughty!

DR. J. FRANK DOUGHTY (San Joaquin County): I am greatly impressed with the susceptibility of doctors to solve their problems by another survey. I wonder, if after this survey, if it is authorized, is completed, if we shouldn't then follow it by successive surveys of the medical profession so that we might then carry on and air our desires for future surveys. It seems to me that the Council of the California Medical Association, the Trustees of the California Physicians' Service and this House themselves have resided within them the power to do all of the things that we are actually authorized to do by the resolution. An independent survey of the California Physicians' Service has been made previously, a number of different times, by business consultants who probably have had more experience in that particular field than any other business consultants that could possibly be employed.

I certainly feel that the committee headed by Dr. Bailey, who is a very competent, enthusiastic, intelligent and aggressive doctor, would be a very fine thing but would it be any better than the committees and the Council and the Trustees and the House of Delegates that you now have? Would you be any more satisfied with their report after it came in? In other words, the matter is this: Why not trust the men to whom you have given the responsibility for the judgment of these actions to carry on? If you don't like them, fire them; but why appoint another committee to come in who is no more competent in the field to assume this job which you yourselves should be assuming? I am opposed to doctors being suckers for surveys. (Applause.)

SPEAKER CHARNOCK: Is there any more discussion?

. . . The question was called for. . . .

SPEAKER CHARNOCK: The question has been called for. You are voting on the report of Reference Committee No. 2. This will require a two-thirds vote of the House. Those who are in favor of supporting the report of Reference Committee No. 2 will please signify by saying "aye" and to the contrary, "no."

. . . A vote was taken on the motion. . . .

SPEAKER CHARNOCK: The Chair is in doubt and we will ask those who were in favor of supporting Reference Committee No. 2 to please stand.

. . . A standing vote was taken on the motion by those in favor. . . .

SPEAKER CHARNOCK: Now those who are opposed to the report of Reference Committee No. 2 will please stand.

. . . Those opposed stood. . . .

SPEAKER CHARNOCK: It is 25 to 119 and the report of Reference Committee No. 2 has been accepted by over a two-thirds vote.

The next order of business is the report of Reference Committee No. 3. At this time I will ask Dr. Craig to make some preliminary remarks on the matter as well as give his report.

REPORT OF REFERENCE COMMITTEE No. 3

DR. LYLE CRAIG: Mr. Speaker, Members of the House of Delegates: I think the preliminary remarks have been largely covered by Mr. Hassard and we have very little to say on the same subject.

The committee consisted, in addition to myself, of Dr. Halley of Fresno and Dr. Zumwalt of San Francisco. I want to thank them both for their cooperation.

Ten documents were submitted to this committee, one constitutional amendment, two amendments to the By-Laws and seven resolutions.

Resolution No. 3*

The amendment to the Constitution was introduced at the instance of the Council by Dr. Shipman and consisted entirely in the addition of the Vice-Speaker to membership in the Council. The new Constitution did not include the Vice-Speaker and this amendment merely added the word "Vice-Speaker" to the clause enumerating membership in the Council. This is a constitutional amendment and it must be on the table for one year. It does not require any action by the Reference Committee. It is therefore returned to the House of Delegates to lie on the table as provided in the Constitution.

* Note: In the committee's report the resolutions were not considered in the order in which they were introduced.

Resolution No. 4

The first amendment to the By-Laws, as introduced by Dr. Shipman for the Council, provides for the apportionment of the membership of the House of Delegates. This proposal is found to be superfluous because the By-Laws as printed in the September issue of CALIFORNIA MEDICINE contain a misprint or are incorrect and the wordage is correct as shown in the minutes of the May meeting. I read from the August issue of CALIFORNIA MEDICINE which contains the minutes of the meeting in which the clause mentioned reads that, "Commencing with the 1952 regular session of the House of Delegates, each component Society shall be entitled to one Delegate for each 50 active members, or major fraction thereof, according to its membership as of the first day of November of the preceding year, provided, however, that each component Society shall be entitled to a minimum of two delegates." How that phrase "one additional delegate" got into the By-Laws as printed in CALIFORNIA MEDICINE, I do not know; but the original By-Laws as passed are word for word, period and comma, and the exact wording, as Dr. Shipman has in his resolution. The committee therefore feels that the amendment is superfluous and does not require action by the House.

I move the adoption of this section of the Report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this section of the report and those in favor will signify by saying "aye" and those to the contrary "no."

. . . A vote was taken on the motion and it was unanimously carried. . . .

Resolution No. 2

DR. CRAIG: The proposed amendment to the By-Laws, as introduced by Dr. Loos, reads as follows:

"I move that the By-Laws of the California Medical Association be amended as follows:

"That Subparagraph (a), of Section 7 of Chapter V of the By-Laws of the California Medical Association be and is amended by substituting a semi-colon for the period now present at the end of the single paragraph and adding thereafter the words '. . .; provided, however, that the Interim Session shall not be held, in any year, unless the Council shall, in its discretion and by the majority vote of its members, determine and declare the need therefor.'

"Thus, Subparagraph (a) of Section 7 of Chapter V as amended shall read as follows:

"(a) In each year there shall be two Regular Sessions of the House of Delegates; the time and place of such sessions to be determined by the Council as far as possible in advance and notice thereof published in the Journal of the Association. One of these sessions shall be held in the first six months of each calendar year and is designated the Annual Session; the other shall be held in the last six months of each calendar year and is designated the Interim Session: provided, however, that the Interim Session shall not be held, in any year, unless the Council shall, in its discretion and by the majority vote of its members, determine and declare the need therefor."

The purpose of this resolution is to make the Interim Session optional at the discretion of the Council, rather than mandatory as in the By-Laws. Let us call your attention to the fact that this resolution does not delete Subparagraph (c) of the same section of the same chapter which provides that: "Resolutions and other new business may be introduced at either Regular Session, but shall not be acted upon until the next Regular Session, provided, however, that any resolution designated as an emergency measure may be acted upon at the session in which it is introduced but shall require a two-thirds affirmative vote for adoption."

Mr. Hassard spoke to you about the method of proceeding and what measures were emergency measures, and that, of course, has been a little trouble to the committee.

If, by chance, the Interim Session in any year were omitted, this would mean that resolutions introduced at the Annual Session must lie over a full year before any vote could be taken upon them because there would be no Interim Session. The committee does not believe that this long delay would be either advisable or the will of the House. Inasmuch as this is the first Interim Session and the routine has been very incompletely worked out, and inasmuch as any action which permitted the elimination of the Interim Session could not be effective prior to one year from now, the committee feels that the House will be better able to judge at the next Regular Session in April as to their desires in this regard.

Mr. Speaker, the committee recommends that this amendment do not pass. The committee will introduce a similar resolution at the next Annual Meeting incorporating the necessary deletions to make it effective and the House will be permitted at that time to vote on the resolution.

At the same time we will introduce a resolution to clarify Section (c) so that if the House wishes to continue the Interim Session it will be clear as to the proper procedure for declaring an emergency measure.

Mr. Speaker, the committee recommends that this amendment in the By-Laws do not pass. I move the adoption of this section of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this section of the Report which, as you understand, nullifies this amendment for this time.

. . . A vote was taken on the motion and it was unanimously carried. . . .

SPEAKER CHARNOCK: The section is accepted.

DR. CRAIG: There were seven other resolutions introduced, none of which was designated at the time of introduction as an emergency. We call the attention of the House that under the new By-Laws all such resolutions will require holding over until the next Regular Session of the Association in April.

Since we have not been able to obtain mimeographed copies of the resolutions in time for this session, such copies will be mailed to the delegates within the next two weeks for your study in the intervening period. Meetings of the committee have been held yesterday and today but the committee welcomes the comments and opinions of any members of the House of Delegates by mail, inasmuch as the By-Laws provide that a written report of the committee must be submitted to the delegates at least thirty days prior to the next session. Since this is true we must insist that such comments be submitted to members of the committee before the first of February in order that we may consider and act upon them and get our recommendations to you thirty days before the meeting.

We thought it would be well, since the resolutions have been read in the House, that we do not read them but just call attention now to the subject matter involved.

Resolution No. 1

The first was a resolution recommending the chartering of a new County Society for Madera County which is now a part of the Fresno County Society.

Resolution No. 5

The next resolution was introduced by Dr. Lambertson of Los Angeles. It was requested that this resolution be made an emergency measure so we had better read the whole resolution:

"WHEREAS, The original purpose of the California Physicians' Service was to explore, test and otherwise act as a pilot plan in prepaid health programs for low income groups and/or individuals; and

"WHEREAS, In reality California Physicians' Service has become a prepaid health plan for many who have high incomes to the financial detriment of the medical profession; and

"WHEREAS, The management of the California Physicians' Service is in fact no longer representative of the viewpoint of the medical profession at large; therefore be it

"*Resolved,* That this House of Delegates recommend to the Administrative Members of the California Physicians' Service that such members approve a change in the By-Laws of California Physicians' Service which will provide that resolutions passed by the Administrative Members of the California Physicians' Service shall be mandatory upon the Board of Trustees and officers of California Physicians' Service, and that such resolutions shall be placed into operation and administered as recommended by the Administrative Members."

At the request of the author, the committee moves that this resolution be made an emergency measure for action at this session of the House of Delegates.

SPEAKER CHARNOCK: Do I hear a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this resolution be made an emergency measure. It will require a two-thirds vote.

. . . A vote was taken on the motion. . . .

SPEAKER CHARNOCK: The Chair rules that it is lost and it is not an emergency measure.

DR. CRAIG: The House understands then that Resolution No. 5, which has just been denoted not an emergency measure, will be placed on the regular agenda for the next meeting.

Resolution No. 6

The next resolution is to classify approval of the different forms of sickness or health insurance. This resolution was introduced by Dr. Gibbons of San Francisco. This would authorize or instruct the Council to appoint a committee or board of their own members with proper clerical assistants to grade and pass upon classifying the different voluntary health insurance plans operating in California. A similar resolution was defeated at the last session but this one has been changed in some respects.

Resolution No. 7

The next resolution is a resolution on voluntary indemnifying medical expense insurance. It merely provides that the Council shall consult with and advise the insurance carriers as to the proper procedure and the proper provisions of their policies to make them acceptable to the California Medical Association, emphasizing the value of the free choice of physicians.

Resolution No. 8

The next resolution was introduced by Dr. Campbell of San Francisco and it has to do with the appointing of a committee for the study and development of a positive program dealing with the problem of the aging. Up until now the committee has taken no action except that inasmuch as this resolution was presented as a simple resolution and not an amendment to the By-Laws, so we have deleted the word "standing" and inserted the word "special." In order that we may have a special committee to appoint a new standing committee we require an amendment to the By-Laws so that, as submitted, it will provide for the establishment of a special committee to study the problem of the aged.

Resolution No. 9

The next resolution, introduced by Dr. Magoon of Santa Clara County, has to do with a provision asking that the Legislative Committee provide for state legislation eliminating tax preference positions of hospitals which do not comply with the will of the House regarding the administration management of their hospital staffs. The last clause possibly should be read:

"*Resolved,* That the Legislative Committee of the California Medical Association be directed to press for the enactment of legislation which shall require that, for privately owned hospitals to be eligible for tax exemption as non-profit institutions, their facilities shall be open on an equal basis to every doctor

of medicine, licensed as a physician and surgeon by the Board of Medical Examiners of the State of California. subject only to such reasonable rules and regulations for practice within the hospital as the organized medical staff of the hospital shall adopt, such rules and regulations to be equally and fully applicable to all members of the medical staff without limitation, without regard to race or color, and without classification affecting hospital privileges."

Resolution No. 10

The next resolution, introduced by Dr. Carson of San Francisco, has to do with the difficulties encountered by doctors in determining exactly what the coverages of the Blue Cross hospital coverage are which apparently eliminate or refuse to be responsible for procedures done on sick patients in the hospitals on the basis that they are purely diagnostic procedures and which may be very essential to the treatment of sick people, and he wishes to have the Council ask the Blue Cross to clarify their ruling and regulation on that matter.

That is the last resolution and inasmuch as none of these are emergency measures the recommendation of the committee will be made in their report which will be mailed to the delegates before the next session.

Mr. Speaker, I move the adoption of this section of the report.

SPEAKER CHARNOCK: Do I hear a second?

DR. BELCHER: Can I have the floor before it is voted upon? The committee, on presenting this report and group of resolutions, stated that none of them were emergencies. The first resolution was about a charter for Madera County Medical Society. Now, admittedly, that is not an emergency measure but it would seem to me that it would be a nice gesture if this House did take cognizance of what these boys are trying to do down there and rather than delay another six months in the granting of this charter, if it is in order, I would like to see that it is made an emergency measure and voted on today. It isn't a true emergency but these boys want to have their own charter. They are all organized and they are all enthusiastic. It would seem to me a nice gesture on the part of this House to give them their charter.

SPEAKER CHARNOCK: Dr. Belcher, would you make that in the form of an amendment to the report of Reference Committee No. 3?

DR. BELCHER: I so move, Mr. Speaker, that the report of Reference Committee No. 3 be amended to consider the resolution granting a charter to the Madera County Medical Society as an emergency measure at this time and voted upon.

DR. CRAIG: I second the motion.

SPEAKER CHARNOCK: It has been moved and seconded that we vote on the amendment, making the resolution regarding the Madera County Medical Society an emergency measure. That will require a two-thirds vote. All of those in favor will signify by saying "aye," and "no" on the contrary.

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is carried and we will now vote on the report as a whole.

A MEMBER: Shouldn't we now vote on the resolution regarding the Madera County charter? I would like to ask what is the recommendation of Dr. Craig and his committee on this particular measure.

DR. CRAIG: The committee considered this one and we are prepared to report on it. We considered whether it should be taken up as an emergency measure but it didn't seem to us to be a real emergency in the sense that we thought it should be voted upon; however, the committee favors formation of this chapter, granting of a charter to the Madera County Medical Society, and recommends that the resolution do pass.

SPEAKER CHARNOCK: We will now vote on the acceptance of the report of Reference Committee No. 3 and those in favor will signify by saying "aye" and to the contrary "no."

. . . A vote was taken on the motion and it was carried. . . .

SPEAKER CHARNOCK: Reference Committee No. 3 is accepted.

Reference Committee No. 4 had no business to come before it.

DR. CRAIG: Does that mean that the resolution is passed?

SPEAKER CHARNOCK: That would be my ruling.

A MEMBER: A point of information. Does the action of the House here insure the granting of the charter to Madera County?

SPEAKER CHARNOCK: That would be my ruling, that the House has decided that Madera County should have its own charter. Is there any appeal from that decision?

A MEMBER: As I understand it, it is necessary for the House, as it has now voted on whether we will consider this as an emergency, and which was carried by a two-thirds vote, to vote whether we will adopt this resolution or not.

SPEAKER CHARNOCK: That was done in the amendment, passing by a two-thirds vote. If it was not clear, we will have a new motion at this time.

THE SAME MEMBER: I so move.

DR. ALLEN T. HINMAN (San Francisco): I move that the charter for Madera County be approved at this time.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that the charter for Madera County be approved at this time.

. . . The question was called for. . . .

SPEAKER CHARNOCK: The question has been asked for and those in favor of granting the charter to the Madera group will signify by saying "aye" and those opposed "no."

. . . The motion was put to a vote and it was unanimously carried. . . .

SPEAKER CHARNOCK: Now, Dr. Craig, will you move the adoption of your report as a whole?

DR. CRAIG: Mr. Speaker, I move the adoption of the report of Reference Committee No. 3 as a whole, as amended.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we accept the report of Reference Committee No. 3 as a whole, as amended. Those in favor will signify by saying "aye" and those opposed "no."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is received as a whole.

Reference Committee No. 4 has no report.

We are now open for new business as Secretary Daniels assures me there is no unfinished business. We will now come to new business and your proposition is now in order, Dr. Gibbons.

DR. HENRY GIBBONS III (San Francisco): Mr. Speaker, the delegation from San Francisco has requested that we get permission from the House to allow publication of argument, both for and against, the resolutions introduced at this session to be published in CALIFORNIA MEDICINE and wish to present an emergency motion to that effect. Therefore, Mr. Speaker, I would like to have your ruling on that and make a request that we have a vote to allow this resolution to be presented.

SPEAKER CHARNOCK: Will you read the resolution and then we will call for a vote as to whether or not we will make this an emergency measure. The Chair will allow you to read it.

DR. GIBBONS: This is an emergency resolution requesting publication in CALIFORNIA MEDICINE of material pertinent to resolutions introduced in this meeting of the House of Delegates:

"WHEREAS, Resolutions introduced in this session need further study and discussion before being voted upon at the regular meeting; and

"WHEREAS, Delegations or individuals presenting resolutions are able to furnish valuable data relative to their consideration; now, therefore be it

"*Resolved*, That the Council of the California Medical Association be instructed to direct the Editor of CALIFORNIA MEDICINE to publish material submitted by proponents of resolutions with the space allocated to such argument to be determined by the Editor; and be it further

"*Resolved*, That an identical privilege be extended to those who wish to present their opposition to resolutions; and be it further

"*Resolved*, That all material, whether in support of or opposed to resolutions, be submitted to the Editor of CALIFORNIA MEDICINE not later than sixty days after the introduction of such resolution for publication in the next succeeding issues, and be it further

"*Resolved*, that arguments, both for and against the resolutions, be written by a person or persons suggested by Reference Committee No. 3 and approved by the Editorial Board of CALIFORNIA MEDICINE.

SPEAKER CHARNOCK: Thank you, Dr. Gibbons.

The first question before the House is: Do you consider this an emergency measure? It will again require a two-thirds vote. Do I hear a motion to that effect?

. . . It was moved and seconded that this be made an emergency measure. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we make this resolution an emergency measure. Those who are in favor will signify by saying "aye" and to the contrary, "no."

. . . A vote was taken on the motion. . . .

SPEAKER CHARNOCK: The Chair is again in doubt. Will you raise your hands as that is easier than standing. You are voting in favor of making this an emergency measure and those who are in favor will first raise their hands and then those who are against making this an emergency measure.

. . . A vote was then taken on the motion by the raising of hands. . . .

SPEAKER CHARNOCK: The motion has lost to make this an emergency measure and seeing that it came up sort of out of order, I should like unanimous consent to have it referred to Reference Committee No. 3. Is there any opposition to having it referred to Reference Committee No. 3?

DR. LEON PARKER (San Francisco): I move that we amend the report of Reference Committee No. 3 and that this be referred to Reference Committee No. 3 and to the Council.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded and now we will hear from Dr. Remmen.

DR. E. T. REMMEN (Los Angeles): I believe, Mr. Speaker, that this motion applies only to resolutions introduced at this session. May I suggest, as an amendment, that it also apply to resolutions which were introduced relating to the Constitution and By-Laws introduced at the last regular session.

SPEAKER CHARNOCK: Dr. Remmen, I don't quite get you. Are you making an amendment to the amendment?

DR. REMMEN: I meant it as amendment to the original motion, not as an emergency.

SPEAKER CHARNOCK: Well, you are out of order. We have one amendment but you can amend that amendment.

DR. REMMEN: Well, it can be taken as an amendment to the amendment but I merely wanted the resolution to apply to all amendments to the Constitution and By-Laws which were introduced at the last session.

SPEAKER CHARNOCK: Well, Dr. Remmen, there is this resolution by Dr. Gibbons which is an amendment to it. Let's clear up the amendment to Dr. Gibbons' resolution and then will you present yours and we will vote on the amendment to Dr. Gibbons' resolution.

DR. MAGOON: A point of order. Is it in order to refer to the Council a resolution that is not yet adopted by this House for either action or even information?

SPEAKER CHARNOCK: It is in order to refer it to the Reference Committee.

DR. MAGOON: Yes, but Dr. Parker's amendment was to refer it to the Council and that is the point to which I take exception.

SPEAKER CHARNOCK: That is a good point but I think that the Reference Committee can work that out. Is there any more discussion?

A MEMBER: A point of information. Is Dr. Gibbons' motion to be handled in the same way as the other resolutions before Reference Committee No. 3?

SPEAKER CHARNOCK: Yes, the Chair will rule it is under new business. We had unanimous consent of the House to accept it. We are now voting upon the amendment.

DR. PARKER: May I introduce an amendment to the amendment?

SPEAKER CHARNOCK: You may, Dr. Parker.

DR. PARKER: This resolution instructs the Council to direct the Editor to publish this material regarding these resolutions. Now, perhaps the Council doesn't have anything to do about it but if you refer it to them or they are cognizant of it, I am sure, in fairness to democratic processes, that they are not going to see that anything else other than that is done.

DR. ASKEY: A point of order. I believe that the first motion was already referred to Reference Committee No. 3; therefore, this which you call an amendment is a new motion to refer this to the Council. I don't think it can be amended because you have already referred it to Reference Committee No. 3.

SPEAKER CHARNOCK: Your point is well taken, and the Chair will rule that way, Dr. Parker. You may make a new motion, if you wish to, but Dr. Gibbons' resolution has already been referred to Reference Committee No. 3 and if Dr. Parker wishes to make a new motion on that, he may do so.

DR. PARKER: Mr. Speaker, I move that Dr. Gibbons' resolution be referred to the Council for consideration and action.

A MEMBER: A point of order. Won't this require a two-thirds vote, referring something to the Council and requesting the Council to do something? We can't do it without the necessary two-thirds vote.

SPEAKER CHARNOCK: Well, Dr. Gibbons' resolution has gone to Reference Committee No. 3 and it will be held there and I understand that Dr. Parker's motion will go to Reference Committee No. 3 also.

DR. DOUGHTY: The House has already expressed its opinion that it not be an emergency measure. Dr. Parker's motion would subvert the will of the House, to make it an emergency measure. I therefore move that Dr. Parker's motion be laid on the table.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that Dr. Parker's motion be laid on the table.

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: Dr. Remmen.

DR. REMMEN: Mr. Speaker, since the original motion has already been referred to Reference Committee No. 3, I don't think I could make an amendment to it without moving to have it recalled from committee. I don't think it that important. I just felt that all amendments to the Constitution and By-Laws before the House of Delegates, whether decided today or at the last session, could be accorded the same treatment and perhaps they could be without a formal motion.

SPEAKER CHARNOCK: Is there any other new business to come before this House? If there is no new business, with the consent of the House, the minutes will be edited by the committee.

At this time I want to thank the two scientific speakers who came before us yesterday and delivered such marvelous addresses.

I also want to thank the Reference Committee and the Credentials Committee; Reference Committee No. 1, Dr. Lambertson, Dr. Cheney and Dr. Dozier; Reference Committee No. 2, Dr. O'Neill, chairman, Dr. Howson and Dr. Carey; Reference Committee No. 3, Dr. Craig, chairman, Dr. Halley and Dr. Zumwalt; Reference Committee No. 4 who were here but had no work to do, Dr. Rosenow, Dr. Graeson and Dr. Nelson.

There being no further business to come before this House, I will declare a motion to adjourn.

. . . It was moved and seconded that the meeting adjourn. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adjourn.

. . . The motion was put to a vote and it was unanimously carried. . . .

SPEAKER CHARNOCK: We are now adjourned.

...The Interim Session adjourned at 11:45 a.m....

In Memoriam

Ball, John D. Died in Santa Ana, December 20, 1951, aged 55, of coronary artery disease. Graduate of the University of California Medical School, Berkeley-San Francisco, 1922. Licensed in California in 1922. Dr. Ball was a member of the Orange County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Brown, John R. Died in Los Angeles, December 27, 1951, aged 83. Graduate of the University of Pittsburgh School of Medicine, Pennsylvania, 1899. Licensed in California in 1924. Dr. Brown was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an Associate Fellow of the American Medical Association.

✤

Campbell, Clayton C. Died in Long Beach, November 22, 1951, aged 72, of cerebral vascular accident. Graduate of Central College of Physicians and Surgeons, Indianapolis, 1904. Licensed in California in 1926. Dr. Campbell was a retired member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Fitzpatrick, Charles P. Died September 1, 1951, aged 56. Graduate of the University of Toronto Faculty of Medicine, Ontario, 1920. Licensed in California in 1944. Dr. Fitzpatrick was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

Fogg, Edward S. Died in Wasco, December 26, 1951, aged 84. Graduate of the University of Michigan Medical School, Ann Arbor, 1897. Licensed in California in 1910. Dr. Fogg was a retired member of the Kern County Medical Society, the California Medical Association, and an Associate Fellow of the American Medical Association.

✤

Gelston, Clain F. Died in San Francisco, November 28, 1951, aged 60, of hemiplegia. Graduate of the University of California Medical School, Berkeley-San Francisco, 1915. Licensed in California in 1915. Dr. Gelston was a member of the San Francisco Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

Holt, Calvin Z. Died in Palm Springs, November 29, 1951, aged 62. Graduate of the University of Arkansas School of Medicine, Little Rock, 1912. Licensed in California in 1925. Dr. Holt was a retired member of the Los Angeles County Medical Association and the California Medical Association.

✤

Laurence, Paul H. Died in Oxnard, December 3, 1951, aged 45. Graduate of Jefferson Medical College of Philadelphia, 1932. Licensed in California in 1949. Dr. Laurence was a member of the Santa Barbara County Medical Society, the California Medical Association, and the American Medical Association.

Ledyard, Cory C. Died in Los Angeles, January 1, 1952, aged 68. Graduate of the University of Southern California School of Medicine, Los Angeles, 1906. Licensed in California in 1906. Dr. Ledyard was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Levi, Leo M. Died in Los Angeles, December 25, 1951, aged 50. Graduate of the Jefferson Medical College of Philadelphia, 1927. Licensed in California in 1933. Dr. Levi was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Lowell, Max. Died in Piedmont, December 30, 1951, aged 57, of acute coronary occlusion. Graduate of Friedrich-Wilhelms Universität, Medizinische Fakultät, Berlin, Prussia, 1921. Licensed in California in 1941. Dr. Lowell was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

✤

Lynn, Isaac W. Died in Desert Hot Springs, November 15, 1951, aged 80. Graduate of the Medical Faculty of Trinity University, Toronto, Ontario, 1904. Licensed in California in 1929. Dr. Lynn was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

McCartan, Edward L. Died in Los Angeles, December 12, 1951, aged 54, of adenocarcinoma of the larynx. Graduate of Creighton University School of Medicine, Omaha, 1922. Licensed in California in 1936. Dr. McCartan was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

McElhinney, Philip P. B. Died in Long Beach, December 15, 1951, aged 58. Graduate of Jefferson Medical College of Philadelphia, 1920. Licensed in California in 1930. Dr. McElhinney was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Oliver, Harry R. Died in San Francisco, December 26, 1951, aged 79, of carcinoma. Graduate of the Cooper Medical College, San Francisco, 1898. Licensed in California in 1898. Dr. Oliver was a member of the San Francisco Medical Society, a life member of the California Medical Association, and a Fellow of the American Medical Association.

✤

Radzow, Karl H. Died in an automobile accident near Fontana, November 28, 1951, aged 34. Graduate of Western Reserve University School of Medicine, Cleveland, 1943. Licensed in California in 1950. Dr. Radzow was a member of the San Bernardino County Medical Society, the California Medical Association, and the American Medical Association.

Shea, Timothy T. Died in San Francisco, December 2, 1951, aged 60, of coronary artery disease. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1915. Licensed in California in 1916. Dr. Shea was a member of the San Francisco Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

Sperling, Samuel N. Died November 10, 1951, aged 57. Graduate of Northwestern University Medical School, Chicago, 1927. Licensed in California in 1928. Dr. Sperling was a member of the Los Angeles County Medical Association, and the California Medical Association.

✤

Stewart, Oliver E. Died in Arcadia, December 14, 1951, aged 77. Graduate of the Hahnemann Medical College and Hospital, Chicago, 1902. Licensed in California in 1935. Dr. Stewart was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

Strickler, Florence Dunlop. Died in San Francisco, November 21, 1951, aged 59, of coronary thrombosis. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1916. Licensed in California in 1916. Doctor Strickler was a member of the San Francisco Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

White, Marcus D. Died in Upland, November 27, 1951, aged 57, of carcinoma of the stomach. Graduate of Washington University School of Medicine, St. Louis, Mo., 1920. Licensed in California in 1922. Dr. White was a member of the San Bernardino County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Questions and Answers about C. P. S.

Question: Do family dependents of C.P.S. members have any coverage for medical care rendered either in the physician's office or at home?

Answer: No. Employee members are the only ones under C.P.S. contracts who are eligible for medical benefits in the physician's office or at home. In many cases, family dependents do have medical benefits *while hospitalized*, commencing with the physician's third visit to the hospital, but in no instances are medical benefits provided for dependents outside the hospital.

Question: What types of congenital deformities are excluded from C.P.S. contracts?

Answer: Excluded from benefits under all C.P.S. contracts are obvious external congenital malformations—such as club foot, hare lip, cleft palate, supernumerary digits, webbed toes and fingers, nevi.

Question: I understand a new manual of instructions on the Veterans Home Town Care Program has been prepared. Is this for distribution to physician members?

Answer: Yes. a new manual has been prepared to describe procedures pertaining to the Veterans Program. The initial distribution of the manual was to C.P.S. physician members who were currently treating veteran patients, but any other physician member may obtain one by contacting any C.P.S. office.

Question: Some of my billings for treatment of veterans have been returned to me for itemization of the first office visit, special procedures, etc. Why is this necessary when I indicated the date of the first office visit and procedures to be performed when I submitted my request for authority to treat?

Answer: The billing (Form 53) is the physician's statement of services rendered. If initial visits, special procedures, etc., are not itemized, they appear only as dates and will be paid as if they were routine—whereas itemization may result in an adjustment of the fee paid to the physician.

Question: Under the recent procedure change in the Veterans Program, requests for non-emergency treatment are now to be made by the veteran instead of the physician. Does this apply to follow-up treatment?

Answer: No. The new regulation applies only to initial non-emergency requests. Requests for continued treatment and initial prompt treatment are made by the physician, as in the past. Continued treatment is requested on Form 53-C, which is sent to the physician by C.P.S. in the middle of the month of the physician's current authority. Initial prompt treatment is requested on Form 52. a supply of which is available for doctors' offices.

Physician Manual

The importance of making full and correct use of the new Physician Manual is stressed by C.P.S. The manual recently was distributed to all C.P.S. physician members' offices for use by physicians and their office staffs in connection with C.P.S. billing.

C.P.S. points out that it was not intended that the contents be memorized, but rather that the manual be used as a reference. Information in the manual is keyed directly to the C.P.S. identification cards which patients are required to show when obtaining professional services covered by their C.P.S. memberships. Code numbers are used on the cards to designate the benefits to which members are entitled, and these benefits are clearly outlined by code number in the manual.

Thus, best results from the manual are to be derived by:

a. Noting the code numbers on the patient's identification card;

b. Referring to the manual for explanation of benefits designated by the code numbers;

c. Billing C.P.S. for services which are benefits of the member's coverage, and billing the patient directly for services not included in his coverage.

NEWS and NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Charles E. Smith, president of the State Board of Public Health and Dean of the University of California School of Public Health, Berkeley, has been appointed to serve on the National Advisory Health Council, one of the several advisory councils of the National Institutes of Health which pass on applications for research and construction grants-in-aid aggregating about 100 million dollars annually.

LOS ANGELES

The **Postgraduate Assembly and Convention** sponsored by the Alumni Association of the College of Medical Evangelists School of Medicine has been scheduled for March 2-4 at the Biltmore Hotel, Los Angeles. Attendance of 1800 is expected. In the official announcement it was said that the popularity of last year's **three-day "short courses,"** held immediately following the assembly, prompted the Alumni Association to offer them again. Short courses in therapeutics, internal medicine, pediatrics, roentgenology, dermatology, psychiatry, surgery, otolaryngology, urology, proctology, anesthesiology, and obstetrics and gynecology are to be given on March 5-7. Educators of the West's medical schools will serve on the faculty for these sessions. Further information may be obtained from Evelyn R. Strachan, managing director, 312 North Boyle Avenue, Los Angeles 33.

* * *

The University of Southern California Medical Extension Education will present a course in **Essential Physics in Radiology** to be given from March 10, 1952 to May 26, 1952 covering x-ray, radium, and isotope radiation, and clinical applications to isotopes. This course will be offered every Monday evening from 8 to 10 p.m.; the first six lectures to be presented at the Los Angeles County Hospital and the last six at the Cedars of Lebanon Hospital. Further information may be obtained from Director, Medical Extension Education, University of Southern California School of Medicine, 1200 North State Street, Box 158, Los Angeles 33.

RIVERSIDE

Dr. James W. Long, of Hemet, was elected president of the Riverside County Medical Association, at the annual meeting of the organization in December. He succeeds Dr. Hugh Martin of Riverside.

SACRAMENTO

Dr. Dan O. Kilroy was elected president of the Sacramento Society for Medical Improvement at a meeting of the Society's board of directors last month, and Dr. A. E. Berman was elected vice-president. Dr. Kilroy succeeds Dr. Milton V. Sarkisian.

Dr. Frank G. Schiro was elected secretary-treasurer by ballot of the society members in December.

SAN JOAQUIN

Officers elected last month by the San Joaquin County Medical Society are: president, Dr. W. E. Longley of Tracy, who succeeds Dr. D. C. Harrington of Stockton; secretary-treasurer, Dr. F. A. McGuire; first vice-president, Dr. E. J. Gough; second vice-president, Dr. N. W. Demas.

SAN MATEO

Dr. Daniel W. Boudett of San Mateo has been installed as president of the San Mateo County Medical Society, succeeding Dr. Harry F. Smith of San Bruno. Dr. Alf T. Haerem of Redwood City was elected president-elect and Dr. Bradley C. Brownson of San Mateo, secretary-treasurer, at the annual meeting of the society.

TEHAMA

Dr. Frank Townley of Corning has been elected president of the Tehama County Medical Society to succeed Dr. Donald E. Thompson. Other officers elected are Dr. E. R. Wilson, vice-president, and Dr. O. T. Wood, secretary, both of Red Bluff.

Dr. James McDuffie of Corning and Dr. R. G. Frey of Red Bluff were named delegates to the California Medical Association.

VENTURA

Dr. John Monahan of Oxnard was elected president of the Ventura County Medical Society at the recent annual meeting of the association. Dr. James Hunter of Ventura was elected to the newly created post of president-elect. He will succeed to the presidency in 1953. Other officers elected were Dr. Robert Williams of Camarillo, treasurer, and Dr. Frank Helbling of Ventura, secretary.

YUBA-SUTTER-COLUSA

At the December meeting of the Yuba-Sutter-Colusa Medical Society, **Dr. Robert L. Ayers** of Marysville was elected president, Dr. Charles B. Kimmel vice-president, Dr. Leon M. Swift secretary-treasurer, Dr. Stanley R. Parkinson delegate to the California Medical Association, and Dr. Joseph J. Salopek alternate delegate.

GENERAL

The Ninth Annual meeting of the **Western Society of Electroencephalography** will be held at Del Monte Lodge, Pebble Beach, California, March 2 and 3, 1952.

* * *

The Eighteenth Annual Meeting of the **American College of Chest Physicians** will be held at the Congress Hotel, Chicago, June 5-8, 1952. A scientific program covering all recent developments in the treatment of heart and lung disease is being arranged.

* * *

A Silver Anniversary will be celebrated this year by the **California Society for Crippled Children,** an organization composed of 45 county societies whose year-round work is financed almost entirely by funds received from the annual Easter Seal campaign. This year, the Easter Seal appeal will be conducted from March 13 through Easter Sunday, April 13.

POSTGRADUATE EDUCATION NOTICES

AMERICAN COLLEGE OF PHYSICIANS

Gastroenterology:

February 25-29 at the Stanford University School of Medicine and University of California School of Medicine, San Francisco. Co-directors Dwight L. Wilbur, M.D., F.A.C.P., and Theodore L. Althausen, M.D., F.A.C.P.

This course will be a survey of recent and significant developments in gastroenterology. Emphasis throughout the course will be placed on gastrointestinal physiology, biochemistry and pathology. The program will comprise didactic presentations, conferences, case presentations and panel discussions. Members of the faculty of the two medical schools will be supplemented by a few outstanding authorities from other institutions.

Fees: A.C.P. members, $30; non-members, $60. Registration: Write to Mr. E. R. Loveland, executive secretary, American College of Physicians, 4200 Pine Street, Philadelphia 4.

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE: UNIVERSITY EXTENSION, San Francisco

Program for General Practitioners (continuation of course offered in 1951):

March 10 through 14 at Mount Zion Hospital.

Psychosomatic Medicine:

March 17 through 21 at the Langley Porter Clinic.

General Information: Detailed programs of courses will be mailed upon request.

Fees will appear in detailed programs. Address all correspondence to Stacy R. Mettier, M.D., Head of Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22, Calif.

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE: UNIVERSITY EXTENSION, Los Angeles

Third Annual Chest Disease Symposium:

In cooperation with Los Angeles Trudeau Society, the Section of General Practice, Los Angeles County Medical Association and the Los Angeles County Tuberculosis and Health Association.

February 21 and 22 at the Los Angeles County Medical Association Building, 1925 Wilshire Blvd.

Fee: $10, payable at time of enrollment, either by check or money order made payable to the Regents of the University of California.

Requests for enrollment or applications for scholarships should be addressed to Dr. Sternberg, c/o Medical Extension, University of California, Los Angeles 24.

Surgical Anatomy (854 AB):

Starts February 13; meets consecutive Wednesdays from 7:30 to 9:30 p.m., in Room 108, Building 5F, U.C.L.A. School of Medicine, 10845 LeConte Avenue, Los Angeles.

Fee: $75.00.

Dermatology in General Practice (865):

February 20 through March 26; meets consecutive Wednesdays from 2 to 4 p.m., in Conference Room, Dermatology Ward, B-Ground-East, General Medical and Surgical Hospital, Veterans Administration Center, Los Angeles.

Fee: $30.00.

Applications or requests for information concerning them should be made to Thomas H. Sternberg, M.D., Head of Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24.

Medical Stenography:

Starts February; includes 12 consecutive Friday meetings, 7:00 to 9:30 p.m., in Room 140, Education Building.

University Extension class bulletin available on request to campus office (BRadshaw 2-6161).

COLLEGE OF MEDICAL EVANGELISTS, Los Angeles

Postgraduate Assembly and Convention:

March 2-4, 1952, White Memorial Hospital, Los Angeles.

Application blanks and brochures will be mailed to all California physicians.

The Navy is presenting the first course to be offered on the Pacific Coast in Medical Aspects of **Special Weapons and Radioactive Isotopes,** for Reserve Officers of the Medical Department. The course is being arranged by the Medical Reserve Representative of the Twelfth Naval District and it will be given under the sponsorship of the U.S. Naval Dispensary, San Francisco. The course will convene at Building 127, Treasure Island, Monday, March 3 through Friday, March 7, 1952. Volunteer Reserve Medical, Dental, Medical Service Corps, and Nurse Corps officers residing in the 11th, 12th and 13th Naval Districts who desire to attend this course should submit their requests for active duty for training to the Commandant's Office at the earliest date. Acceptance of orders to attend this course will not in any way increase the possibility of involuntary recall to active duty, it was announced. Medical officers of the Army and Air Force are invited to participate in this course.

The Annual Spring Convention of the **Oregon Academy of Ophthalmology and Otolaryngology** will be held in Portland, March 24-28, 1952. Otolaryngology sessions are scheduled on March 24, 25, and the morning of March 26. Ophthalmology sessions will be held the afternoon of March 26, and on March 27 and 28. Guest speakers are: Dr. Philip E. Meltzer, professor of otolaryngology at Tufts College of Medical School, Boston; Dr. Francis A. Lederer, professor of otolaryngology at the University of Illinois College of Medicine; Dr. Frederick C. Cordes, professor of ophthalmology at the University of California School of Medicine, San Francisco; and Dr. William Hughes, professor of ophthalmology at the University of Illinois College of Medicine. Dr. Cordes will present the third John E. Weeks Memorial Lecture in Ophthalmology. His subject will be "The Visual Prognosis in Diabetes."

BOOK REVIEWS

BENDER-GESTALT TEST, THE—Quantification and Validity for Adults. By Gerald R. Pascal, Ph.D., Research Psychologist, Western Psychiatric Institute and Clinic; Associate Professor of Psychology, University of Pittsburgh; and Barbara J. Suttell, M.S., Associate Research Psychologist, Western Psychiatric Institute and Clinic. Grune and Stratton, New York, 1951. 274 pages. $6.50.

The clinical psychologist is assuming an increasingly important role as a colleague to the psychiatrist in diagnosis, research and treatment of psychological problems. He has gone a long way from being merely a psychometrician who determines only I.Q.'s. A test such as the Rorschach test is now so well known that the general public is quite aware of its place in the psychiatrist's office.

Not so popularly known is the Bender-Gestalt test which consists of nine simple designs each of which is presented to the patient for him to copy on a sheet of paper. It has been in use for several years as an instrument to estimate intelligence, psychological disturbances and, in particular, the results of cortical disease or injury. Until now, however, there have been only a few limited attempts to quantify the deviations from "normal." The authors postulate that those deviations in an individual of normal intelligence without evident brain damage reflect his attitude toward reality and this attitude is a function of the integrative capacity of the organism.

This volume describes the method of administration and scoring of the test; the data upon which the reliability of the test and scoring system are based, the manner in which standardization on a normal population was accomplished, and the test validity in a group of psychiatric patients, both neurotic and psychotic. This last point is based on the assumption that psychiatrists can accurately differentiate between neurosis and psychosis, but such an assumption is not correct since even the definition of these terms is a controversial one. The authors have assumed, however, that inpatients were "primarily psychotic" and out-patients "primarily neurotic."

Many figures throughout the volume reproduce designs made by children, patients with cortical deficit, and individuals with psychogenic disorders (manic-depressive psychosis, schizophrenia, and neurotic reactions). The significance of high, low, and fluctuating scores and of specific attitudes and deviations in the performance of the Bender-Gestalt test is thoroughly elaborated.

A scoring manual is part of the text, definitions and evaluations of scoring deviations are described in detail, the authors' score sheet is reproduced, and an atlas of 45 representative scored records is presented to facilitate the tester in developing reliable scoring methods.

As in so many other psychological tests clinical judgment must be added to the quantitative scores of the Bender-Gestalt test if it is to be of predictive value in an individual case. "The quantification of the Bender-Gestalt test will, it is hoped, assist the clinician; it does not supplant the need for his art." The test has the advantages of simplicity and speed of administration and if it is utilized as a part of a battery of procedures it may be useful in assisting in psychiatric diagnosis and prognosis. As in other aspects of medicine a test is only as accurate and reliable as the person who administers and interprets it. The authors are to be commended for presenting a clear exposition of this psychological tool and of describing its advantages and limitations.

THE PHYSIOLOGY OF THE NEW BORN INFANT—Second Edition. By Clement A. Smith, M.D., Associate Professor of Pediatrics, Boston Lying-in Hospital, Harvard Medical School. Charles C. Thomas, Springfield, Illinois, 1951. 348 pages. $7.50.

The second edition of "The Physiology of the New Born" is a book which will fill a large need for every physician who assumes responsibility for the care of the infant. To the student of medicine it presents our present knowledge of physiologic, metabolic and immunologic processes of the newborn and the important period of early infancy in a most clear, concise and critically evaluated manner. An effort has been made to present and integrate data obtained from studies of these processes on human subjects with those of animal studies.

Further, the author's rich background of clinical experience and academic observations permit him to present a careful and critical evaluation of the significance of the physiologic and metabolic processes to disease states in infants. Each chapter is concluded with clinical applications of the academic observations.

The chapters on water and electrolyte metabolism and renal physiology are unusually well presented and provide basic information of value to all physicians responsible for the medical or surgical care of infants. Newer knowledge of endocrine physiology and its relationship to homeostatic biochemical and physiologic adjustments of infancy are presented. The chapters on the fundamental aspects of nutrition and immunity of the infant have been reviewed in a practical manner. The bibliography for references is extensive.

This book is a "must" to all students of medicine. Practitioners concerned with the care of infants will find a sound basis for the application of intelligent therapy to disease states of infancy. Obstetricians, particularly, will find this book of great value in understanding the limitations as well as the resistances to stress that reside in the physiologic and biochemical make-up of the infant.

* * *

CLINICAL PEDIATRIC UROLOGY. By Meredith Campbell, M.S., M.D., F.A.C.S., Professor of Urology, New York University Post-Graduate Medical School. With a section on **Nephritis and Allied Diseases in Infancy and Childhood** by Elvira Goettsch, A.B., M.D., Associate Professor of Pediatrics, University of Southern California School of Medicine; and John D. Lyttle, A.B., M.D., late Professor of Pediatrics, University of Southern California School of Medicine. W. B. Saunders Company, Philadelphia, 1951. 1112 pages with 543 figures. $18.00.

Pediatric urology differs from that in the adult, hence deserves a separate text for two reasons: It requires special instruments and techniques, and it deals mainly with anomalies and their sequelae. Twenty per cent of this handsome volume is exclusively devoted to anomalies and much of the remainder describes their influence in infection, calculous disease, etc. The author, who has limited himself to pediatric urology, bases his paragraphs and conclusions on his own observations and writes on each aspect of genito-urinary disease in children with authority.

The discussion of each subject includes the practical points in diagnosis (with pyelographic depiction where possible) and detailed directions for treatment. There is a whole chapter of illustrated operative procedures. This volume will be used by urologists and would be a valuable reference work for pediatricians.

TREATMENT OF ASTHMA—Somatic and Psychiatric—Edited by Harold A. Abramson, M.D., Associate Physician and Chief, Allergy Clinic, The Mount Sinai Hospital, New York. The Williams and Wilkins Company, Baltimore, 1951. 751 pages. $11.00.

This volume contains contributions on many aspects of bronchial asthma by 34 qualified allergists and scientists. Although the discussions do not harmonize into a text which presents a definite plan of diagnosis and treatment, an open-minded reading of the book will be stimulating and profitable to all physicians who face the challenge of bronchial asthma.

The first two chapters deal with present concepts of lung physiology. Ratner then summarizes the present knowledge of experimental asthma. Evidence concerning allergic reactions in animals other than man is well assembled by Wittich. Diagnostic tests are discussed by Peskin, who restates his original observations on non-reaction to skin tests in allergic disease caused by pollen. Rogers also comments on non-reaction to skin tests and stresses the fatalities which arise from intradermal testing, especially when previous scratch testing has not excluded definitely reacting allergens. Unlike Swinney, Rogers noted little success with test-negative diets as compared with elimination and other trial diets in the diagnosis and control of allergic disease caused by foods.

The diagnosis and treatment of disease caused by sensitivity to pollens is well presented by Rockwell. Charts of pollens of major and secondary importance in various parts of the country might have been included. Of interest to some readers will be the chapters on the chemical nature of pollen and dust allergens.

Peskin's discussion of the treatment of asthma in children is worthy of study. Of interest are two prescriptions said to be used by Dr. Gay of Mississippi. Death from morphine, Demerol and other opiates and the danger from any but light sedatives are well emphasized.

Davidson commendably presents various methods for the study of food sensitivity.

The importance of fluid and mineral balance in severe or intractable asthma is stressed in an excellent chapter by Brown. His chapter on antihistamines properly minimizes their value in bronchial asthma.

The otolaryngological aspects of asthma could have no better discussant than Hansel.

Abramson's previous contributions on inhalant and aerosol therapy make up chapters on this subject. The discussion of the enhanced inhalant effect of epinephrine when combined with glycerol, the studies of the size of droplets and of various atomizers giving the best results, and especially the chapter on aerosol therapy in infants and children by Joseph Miller are worthy of study.

Cortisone and ACTH in asthma are carefully considered by Colfer.

The chapters on bronchoscopy and especially on surgical operation in asthma might overly impress physicians, especially those who treat few asthmatic persons, with the importance of these procedures.

Finally the psychosomatic aspects of bronchial asthma are presented in chapters by Abramson, Miller and Baruch, Ross, and Wilson.

* * *

OPHTHALMOLOGY. By Arno E. Town, M.D., Professor of Ophthalmology, The Jefferson Medical College of Philadelphia. 208 Illustrations and 4 colored plates. Lea & Febiger, Philadelphia, 1951. 511 pages. $10.00.

Dr. Town, together with eleven contributors, has written a book on ophthalmology intended primarily for the present-day undergraduate and the general practitioner. The book is well printed and has many excellent illustrations including four plates in color. Figure 11 on the slitlamp, however, is inverted so that it gives an erroneous impression of the position of the anterior "Y." There are some new ideas in presentation that add to the value of the book. It has an excellent index.

Certain chapters warrant special comment. The chapter on refractive errors discusses the subject with sufficient detail so that the student can understand the subject without wading through many technical and optical details. The chapter on the cornea is well written and organized. The table at the end of the chapter giving in outline form the etiology, clinical appearance, course and therapy should be particularly useful. Approximately 40 pages are devoted to the discussion of the ophthalmoscopic findings in retinal disease. Under each disease or abnormality is listed the ophthalmologist's interpretation and the internist's possible diagnosis as based on ophthalmoscopic findings. The fundus drawings, mostly from the collection of Dr. E. B. Gresser, are good. The chapter on glaucoma is a concise, well-written, easily understood account of the disease, with a good description, in outline form, of the action of the various drugs used. The chapter on ocular changes in general disease is an eight-page outline listing the disease with the ocular manifestations in the adjoining column.

The standing orders for eye accidents and injuries for industrial dispensaries are short and practical.

The book is a good one and presents a little more detail than the usual student textbook on ophthalmology. While it was written primarily for the student and the general practitioner, the ophthalmologist will find it a convenient quick reference book in daily practice.

* * *

HANDBOOK OF OPERATIVE SURGERY OF THE STOMACH AND DUODENUM. By Claude E. Welch, M.D., Associate Visiting Surgeon, Massachusetts General Hospital; Clinical Associate in Surgery, Harvard Medical School. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago. 1951. 349 pages. $8.50.

The stated purpose of this book is to be a practical guide for younger surgeons. In the main it fulfills this aim. The book is compact in size and content, it is attractively bound and printed and contains a wealth of useful drawings.

In a volume which makes an effort to be brief and confine itself to the important surgical procedures, too much space is given to the subject of gastrostomy, an operation which is neither required nor done as frequently as formerly. Seventeen pages and eight plates are devoted to a subject which could be greatly reduced in a book of this type.

The excision of gastric and duodenal diverticula is well described and illustrated. It is disappointing to find included the description of the inversion procedure for diverticula. This procedure has no place in modern surgical therapy. It is unfortunate that the operations of cardioplasty and esophagogastrostomy are described for the treatment of achalasia. We know now that open plastic procedures on the cardia for achalasia are contraindicated whereas the Heller operation is simple and beneficial and apparently is not followed by esophagitis and ulceration as is so frequently the case with the plastic procedures.

The various types of gastric resection for both ulcer and cancer are well described and illustrated and the subject of the handling of the difficult duodenal stump is well covered.

Most of the drawings are excellent. Only very few, namely: A, S, and T on plate 60, while adequate for their purpose, are not as pleasing to the eye as most of the others.

The criticisms made are of relatively minor importance. In general the book is excellent; it is refreshingly simple in make-up and content and should prove popular in the group for whom it was written.

INFANT CARE—Children's Bureau Publication No. 8—1951—Ninth Edition. By the Federal Security Agency, Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 145 pages. 20 cents.

"Infant Care" has undergone another revision, bringing it up to date. This little pamphlet was first published in 1914 and has had eight previous revisions. In its present form it is an excellent booklet for mothers. It is well written, it covers all the aspects of infant care both from the pediatric angle and from the psychiatric angle and is very well illustrated by attractive pictures. It should continue to spread its influence among parents in widely scattered areas of this country.

* * *

STATISTICS FOR MEDICAL STUDENTS AND INVESTIGATORS IN THE CLINICAL AND BIOLOGICAL SCIENCES. By Frederick J. Moore, M.D., Associate Professor of Experimental Medicine; Frank B. Cramer, B.A., Research Fellow; and Robert G. Knowles, M.S., Research Associate, Department of Experimental Medicine, University of Southern California School of Medicine. 11 Figures, 16 Tables, 113 pages. The Blakiston Company, Philadelphia, 5, Pa. 1951. $3.35.

The authors have succeeded in condensing most of the pertinent data of the quantitative method in a single volume, which when augmented by appropriate lecture material and illustrated with examples from the field of biology, meets the minimum requirements of advanced students for a quantitative method of presentation of data which are subject to the influence of numerable variables. The authors have been most meticulous in the use of the terminology of biometry, often at the expense of clarity. This compact volume constitutes a *vade mecum* for a lecture course in the principles of the statistical method as conceived by the authors.

The book is difficult to read because the publishers sacrificed clarity and readability for expediency and economy of production. This volume is suitable as a supplementary syllabus for intermediate students in the field of biometry.

* * *

MODERN MEDICATION OF THE EAR, NOSE AND THROAT. By Noah D. Fabricant, M.D., M.S., Clinical Assistant Professor of Otolaryngology, University of Illinois, College of Medicine, Grune and Stratton, New York. 1951. 245 pages. $5.75.

This book compresses considerable information, both factual and theoretical, within its 245 pages. A short sketch of the anatomy, histology and physiology of the ear, nose, throat and larynx is outlined at the beginning of each section. Bacteriology of certain diseases is given when indicated. Therapy, old and new, for all common diseases of the ear, nose and throat is detailed. There is a chapter on the modern conception and therapy of headache.

According to the author, "The book's dual aim is to present both recent advances and time-tested experiences with drugs, not only from the standpoint of the specialist but from the point of view of the general practitioner." In some ways this book is a "therapeutic review" rather than a book on advice in the practical application of medication of the ear, nose and throat. The therapy presented is abundant and, for the experienced specialist, serves possibly as a good reference work. For the general practitioner who does not have the opportunity of reading the specialty publications, it is a summary of what has been and is being used. If, however, the general practitioner consults this book for advice he may become confused. In one subject, for example, "Medication of Tinnitus," the author names, in one paragraph, more than fifteen medicaments that have been reported as aiding tinnitus. He ends this paragraph by stating, "Unfortunately none of these agents can be consistently relied upon to give relief, but most of them can be tried." Such a review, without separating the good from the bad, is of limited help to the general man who seeks help. The value of future editions would be enhanced if the author used his or others' experiences to summarize the most accepted therapy for each individual condition.

This book is well organized, is read easily and, notwithstanding the above criticism, is recommended as a reference book for both the specialist and the general practitioner.

* * *

EATING PROBLEMS OF CHILDREN—A Guide for Parents and EATING PATTERNS OF CHILDREN—A Guide for Doctors and Nurses. By The National Association for Mental Health, Inc., 1790 Broadway, New York 19, N.Y., 1951. One to 99 copies, 15c each; 100-999, $8.00 per hundred; 1000-4,999, $6.50 per hundred; 5,000-9,999, $5.50 copies per hundred; 10,000-24,999, $5.00 per hundred; and 25,000 copies or more, $4.50 per hundred.

EATING PROBLEMS OF CHILDREN—*A Guide for Parents.*

This is an excellent pamphlet and should have extensive use in doctors' offices. It touches on the important aspects of feeding problems both from the pediatric point of view and from the psychiatric point of view and is in such a readable form with such excellent illustrations that everyone should enjoy it. It should be a worthwhile supplement for doctors when they have such a problem.

EATING PATTERNS OF CHILDREN—*A Guide for Doctors and Nurses.*

This second pamphlet, to accompany the first one, is likewise an excellent pamphlet. It would probably serve a greater purpose in offices where either the doctors or nurses have not had pediatric education within the last ten years. At present most of these problems are discussed in the education for pediatrics both by doctors and by nurses and therefore are not as important to the group of specialists as it is for those people who must handle children when they have not had much training or experience with them. It should serve a very useful purpose in many situations.

* * *

SEX AND THE LAW—Morris Ploscowe. Prentice-Hall, Inc., 70 Fifth Ave., New York. 310 pages. $3.95.

In this book a distinguished jurist considers every form of sexual activity with which the law concerns itself. There is presented a history of the law of marriage, divorce, and annulment, as well as a general discussion of criminal sexuality. Of real value are the author's recommendations for constructive amendment of these laws.

This work will be of particular interest to criminologists, legislators, sociologists, and psychiatrists.

* * *

A DOCTOR'S PILGRIMAGE—Edmund A. Brasset, M.D., J. B. Lippincott Company, Philadelphia, 1951. 256 pages. $3.50.

In *Henry V*, the bard observed, "There is occasions and causes why and wherefore in all things." A diligent search of this well printed book fails to disclose even a slender clue as to the "occasions and causes" of its composition or publication. The good doctor's career blooms slowly through the usual forest of weeds, and is beset by miscellaneous bad weather in the form of difficult patients, matrimony, offspring, postgraduate education and (we assume) success.

Here and there in the book there are slender insertions of medical advice, but no additions to the world's wit or wisdom.

The bard first named also composed *Henry IV*, and in that he observes, "If reasons were as plenty as blackberries, I would give no man a reason upon compulsion." This is not the blackberry season. Perhaps it is even not the autobiography season.

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Medical Management of Renal Lithiasis

Increasing the Protective Urinary Colloids With Hyaluronidase

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SUMMARY

Urine is a highly saturated solution due to the presence of certain colloids. The protective action of urinary colloids is of major importance in preventing precipitation, agglomeration and conglomeration of crystalloids from a super-saturated solution.

If the concentration of such protective colloids is insufficient, stone formation begins or is accelerated. In 680 human subjects, the incidence of stone was found to be almost inversely proportional to the degree of protective urinary colloids present. Urine specimens were subjected to ultramicroscopic examination, determination of electric charge carried by the colloidal particles, determination of the surface tension, and photo-ultramicrographic studies.

Subcutaneous injection of hyaluronidase mixed with physiologic saline solution greatly increases the content of protective colloids in the urine. The colloids are caused to set up to a gel, thereby preventing electrolytes present from crystallizing. They act as excellent dispersing agents and prevent the formation of stone.

Hyaluronidase therapy, using 150 turbidity reducing units every 24 to 72 hours, was effective in preventing calculous formation or reformation during a period of 11 to 14 months in 18 of 20 patients in whom, previously, stones formed rapidly. In a second series of ten patients in whom stones formed rapidly, larger doses of hyaluronidase, averaging 300 turbidity reducing units every 24 to 48 hours, were given. The period of observation at the time of report was from six to ten months. In this group, there was no new stone formation or enlargement of existing stones as evidenced by x-ray studies at 30- to 60-day intervals.

From the Butt-Douglas Medical Foundation, Pensacola, Fla. (Butt); Professor of Colloid Chemistry, Massachusetts Institute of Technology, Cambridge, Mass.; Worcester Polytechnic Institute, Worcester, Mass. (Hauser); Director, Wyeth Institute of Applied Biochemistry, Philadelphia (Seifter).

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THE nature and process of kidney stone formation is not completely understood, and the treatment, other than surgical, is still inadequate. The medical management of calculous disease has been primarily directed toward attempts to diminish the concentration of crystalloids excreted in the urine or to free crystalline material from a stone, thus caus-

ing its disintegration. Such therapeutic measures have not proven uniformly successful, with the exception of correcting certain metabolic disorders. Consequently there is great pessimism in the minds of many physicians who are confronted with such problems.

The formation of calculi is a complex process; several concomitant factors are essential in their production. Kidney stones are formed of matter present in two conditions, namely, crystalline and colloidal. They may be defined as concretions composed of urinary crystalloids bound together by and incorporated in a colloidal matrix. Concepts concerning the etiology of stone and consequently its treatment have changed considerably in recent years as the result of intensive laboratory and clinical investigation.[3-8, 10, 11, 13, 16]

The role of protective urinary colloids in the treatment and prevention of stones has, up to quite recently, received little attention. Although Lichtwitz[14] demonstrated the importance of colloids in increasing the solubility of the crystalloidal components in the urine, there is in the medical literature a surprising lack of information concerning further investigation into this problem. Prophylactic and therapeutic efforts have been focused upon preventing the precipitation of colloids and thus indirectly diminishing the formation of urinary deposits.

Colloids or matter in a colloidal state are aggregates of molecules and thus are in a position between the microscopic and molecular dimensions. Their sizes are considered to range from 0.001 Mu to 1 Mu (10^{-7} to 10^{-4} cm.). A colloidal solution, when examined macroscopically or with an ordinary microscope, appears to be clear. It is necessary to view the colloidal particles by reflected light rather than by transmitted light because their dimensions are less than the wave length of visible light. When sols, as these solutions are called, are observed with the ultramicroscope, the colloidal particles appear as bright discs in a state of ceaseless, agitated, zig-zag, erratic, rapid movement known as Brownian molecular motion. The phenomenon constitutes a visual demonstration of molecular kinetic energy. The apparent size of the bright images bears no relationship to the size of the actual particles. It is possible, for practical purposes, to count the number of particles present in the field of the ultramicroscope and thus determine the number in a known volume of fluid (field diameter approximately 0.002 mm.; volume 1 x 10^{-9} ml.).

If the particles of a substance are reduced in size until the dimensions become submicroscopic and are distributed throughout a second medium, they develop characteristic properties attributable to the enormous suface area of the dispersed phase. It has been estimated that one gram of colloidal material in urine has a surface area of approximately 5,000 square meters. One of the most important results of this large surface is the unsaturation of ions located in the surface, causing adsorption of ions dispersed in the surrounding medium and carrying an electric charge of opposite sign. This leads to the formation of electrical charges around the particles, preventing the formation of larger aggregates. Another important factor in preventing precipitation and agglutination of colloids and crystalloids is that sedimentation of finely divided material may be almost entirely counteracted by the Brownian motion of the colloidal particles. Because of the extreme minuteness of colloidal particles, forces come into play which are negligible in greater dimensions. Such forces are dynamic, not static factors.

Figure 1.—Ultropak microscopic view × 2,500. Beginning of kidney stone formation by crystallization of urine in white male with rapidly forming bilateral, calyceal stones.

Urine is a highly saturated solution of extremely complicated composition, in which electrolytes, as well as non-electrolytes, are dissolved in much higher concentration than their solubility in water would indicate. The reason for this is that urine of a healthy person contains colloids which prevent the precipitation of substances in such super-saturated solutions, as long as their degree of dispersity is sufficiently pronounced. It is the protective action of these colloids which is important in preventing precipitation, agglomeration and conglomeration of crystalloids. If the concentration of such protective colloids is insufficient, however, then the crystal nuclei are "sensitized" and stone formation begins or is accelerated (Figure 1).

From what is known of the effect of colloids in increasing the solubility of stone-forming salts and

Figure 2.—Ultropak microscopic view, × 2,500. Urine deposit of white male who had constant symptoms of kidney stones. This picture was taken ten minutes after hyaluronidase had been injected. It clearly shows the almost immediate reaction to this medication, because now the solid particles have all become the dispersed part of a jelly-like cluster.

preventing their precipitation, it is logical to assume that if their protective power is diminished or absent, urinary deposits will form more readily. This mechanism probably also applies to other types of calculous formation, whether in the teeth, salivary ducts, pancreas, gallbladder or prostate gland.

During the time that one of the authors (A.J.B.) was stationed on various islands in the Pacific Ocean during World War II, he had an excellent opportunity to study the incidence of stone formation among persons of many different ethnic groups and nationalities. From these observations, and from further investigations in West Florida, which is an area of high stone incidence, it became evident that the only common factor whch applied in the majority of cases was that of the presence or absence of protective urinary colloids in the various cases studied.[3-8] The significance of urinary colloids in the relationship to stone formation was further investigated in a series of 680 subjects.

Specimens of urine were obtained aseptically from both male and female patients and were subjected to ultramicroscopic examination, determination of electric charge carried by the colloidal particles, and determination of the surface tension. The most characteristic specimens were subjected to photo-ultramicrographic studies. For the ultramicroscopic examination, the "colloidal activity" was graded from zero to four; zero representing no colloidal activity; grade one minus, one to two colloidal particles intermittently present in the field; grade one, one to five particles constantly present in the field, grade two, six to ten particles per field; grade three, 11 to 20 particles per field; and grade four, over 20 particles per field.

In the ultramicroscopic studies it was noted that the degree of colloidal activity present in urine samples from which all extraneous sources of colloidal material had been excluded, was almost inversely

Figure 3.—Ultropak microscopic view, × 2,500. Urine deposit of white male in whom calyceal stones rapidly form bilaterally. Besides a few large crystals, the urine is full of solid crystal micelles which tend to aggregate and eventually grow into larger stones.

proportional to the incidence of stone.[5-8] In the urine of Negroes (who are relatively immune to calculous disease) there was considerably greater colloidal activity than in urine from white subjects. In a series of 250 cases of kidney stones observed during a period of three years, there were only six cases, or 2.4 per cent, in Negroes. Approximately 10 per cent of all patients observed were Negroes. Excretory radiographic studies were routinely made on all private and charity patients.

The urine of females generally had a higher concentration of ultramicroscopically detectable particles than that of males. In practically all statistical series, the incidence of stone is significantly higher in males than in females. In a series of 250 cases of renal lithiasis observed by the authors, there were 167 males and 83 females. The concentration of ultramicroscopically visible colloidal particles in urine from pregnant women greatly surpassed the concentration of such colloidal particles in urine of non-pregnant women. In an analysis of collected series of 49,000 obstetrical cases from various parts of the United States, it was noted that only 15, or 0.03 per cent, were complicated by stone.[2, 9, 12, 15] A par-

turient woman, with dilatation and stasis of the urinary tract, often complicated by infection, is usually well protected against formation of stone. This would indicate that pregnancy does not predispose to calculous disease, but actually aids materially in preventing stone formation.

Surface tension determinations were made with the pendant drop method[1] from urine of various patients after it had been subjected to ultracentrifuging, whereby all matter visible in the ultramicroscope was removed. The results clearly demonstrated that urine of white females had a considerably higher surface tension than that of Negro females. The surface tension of urine of both white and Negro females decreased during pregnancy. In addition, it was noted that the amount of colloidal particles visible in the ultramicroscope significantly increased as pregnancy progressed.

In electrophoretic studies of the non-centrifuged samples of urine it was observed that urine which had a low surface tension had all been obtained from patients who were free of stone, or those who were relatively immune to stone, such as Negroes. This would indicate quite clearly that this favorable condition is attributable to the presence of capillary-active lyophilic colloids. The presence of these capillary-active agents is the predominant factor in preventing the precipitation and conglomeration of crystalloids and thus preventing the formation of stones. This is due to their acting as excellent dispersing agents and protective colloids which form a reversible gel, which prevents the formation of stone from solid crystals of inorganic matter (Figure 2).

While seeking a protective colloid that is excreted in the urine, it was found that hyaluronidase (Wydase®) not only appreciably reduces surface tension, but, when mixed with physiologic saline solution and injected subcutaneously, also acts to disperse minute particles suspended in urine and will prevent stone formation. This is due to the fact that it causes the natural urine colloids and abundant physiologically increased protective urinary colloids to set up to a gel, thereby preventing the electrolytes present from crystallizing.

Chart 1.—Structural formula of hyaluronic acid.

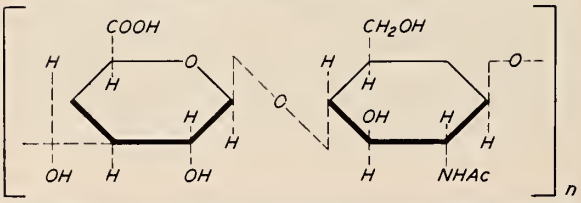

Figure 4.—Ultropak microscopic view, × 2,500. Urine deposit of the same patient as in Figure 3, thirty minutes after hyaluronidase had been injected. To be noted is the complete reaction of this drug, as now the solid particles have all become the dispersed part of a jelly-like cluster and cannot further aggregate and eventually grow into larger stones.

Figure 5.—Ultropak microscopic view, × 2,500. Urine sediment of patient with parathyroid adenoma and multiple, bilateral, renal calculi. The urine is full of solid aggregates of ultramicroscopic-sized unprotected colloidal particles, which tend to conglomerate and eventually grow into larger stones of clinical importance.

Hyaluronidase is an enzyme whose molecular weight has been estimated to be between 60,000 and 70,000. Oxidizing and reducing agents destroy its activity. Hyaluronic acid, a substrate of hyaluronidase, is a linear or spiral polymer whose molecular weight has been estimated at from 200,000 to 2,000,000. It is composed of alternating units of acetyl glucosamine and glucuronic acid (Chart 1). It is a viscous mucopolysaccharide, which in animal tissue seems to bind with water in interstitial spaces, holding cells together in a jelly-like matrix. Hyaluronidase releases hyaluronic acid at the site of injection. The weakened barrier begins to reconstitute itself as the hyaluronidase action is dissipated. During the period of repair, excess hyaluronic acid or a substrate is present in the blood and is excreted in the urine. The effect of hyaluronidase on increasing protective urinary colloids is an indirect one as the hyaluronic acid, or one of its products, when released, is excreted in the urine, thus acting as a protective colloid.

The clinical application of increasing protective colloids by parenteral injection of hyaluronidase is a new concept in the treatment and prevention of renal lithiasis. The first 20 patients subjected to the treatment had multiple, bilateral, and rapidly recurring renal calculi. They had passed numerous stones at regular intervals over a period of years and new stones developed within a period of weeks or a few months. In these patients, no regimen of therapy had been effective in reducing the formation or reformation of stone before hyaluronidase therapy was instituted. Subcutaneous injection of 150 turbidity reducing units of hyaluronidase mixed with 1 cc. of saline was regulated individually by observing the duration of increased colloidal activity after injection of the drug, so that this protective activity was maintained at an increased level. This varied from 19 to 120 hours and the average was from 24 to 72 hours. Each patient was investigated with regard to all known etiological factors as relates to stone formation. At the time of this report these patients had been receiving hyaluronidase therapy for from 11 to 14 months and no other form of therapy to combat stone formation had been employed during that time. In 18 of these 20 patients (90 per cent), no new stone formation or increase in size of existing stones occurred when the drug was taken properly, as is evidenced by roentgenograms taken at 30-day to 60-day intervals. A second series of ten patients, in all of whom stones formed rapidly, received larger doses of hyaluronidase, averaging 300 turbidity reducing units every 24 to 48 hours. At the time of this report, after periods of treatment ranging from six to ten months, there was no new stone formation or increase in size of existing stones, as evidenced by x-ray films taken at 30- to 60-day intervals. Three cases are summarized and only significant findings are noted.

REPORT OF THREE CASES

Case 1. A 34-year-old male had had symptoms for seven years. Stones composed of calcium phosphate and ammonium magnesium phosphate were passed at intervals of one to five months. The degree of protective urinary colloidal activity was extremely low (Figure 3). In roentgenograms, innumerable, bilateral calyceal stones were noted. Hyaluronidase therapy was started October 2, 1950. X-ray films were taken at intervals of one to two months and there was no evidence of new stones or growth of existing stones during the 11 months after therapy was begun. Protective urinary colloids were maintained at an elevated level (Figure 4). The patient passed stones on two occasions when therapy was discontinued for three weeks each time. Otherwise, he was asymptomatic.

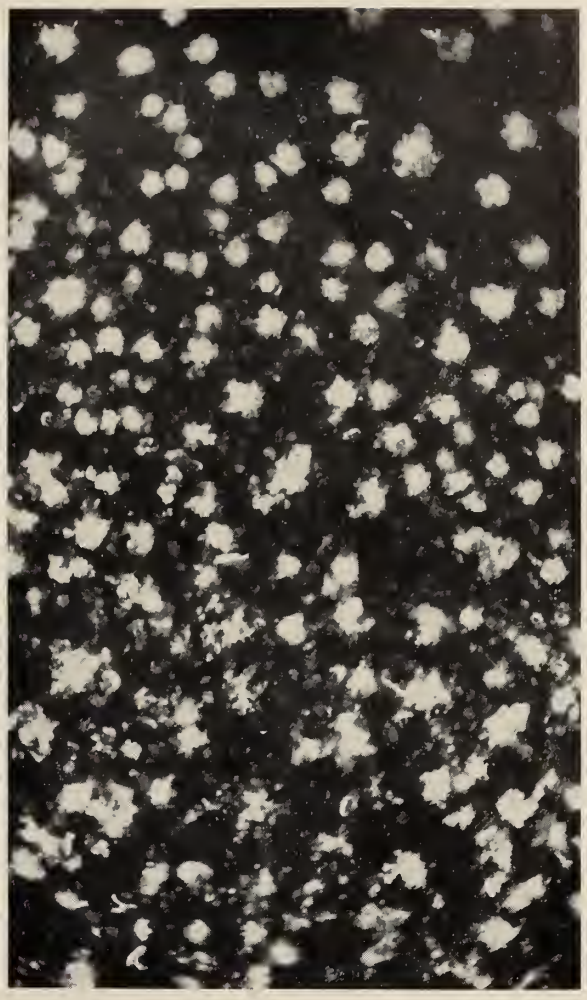

Figure 6.—Ultropak microscopic view, × 2,500. Deposit in urine of same patient as in Figure 5 thirty minutes after injection of hyaluronidase. Now forming in the urine are only highly solvated gel clusters which are readily redispersed when diluted.

Case 2. A woman, 50 years of age, who had had symptoms for 25 years, passed stones composed of calcium phosphate at intervals of one to three months. The protective urinary colloid content was extremely low (Figure 5). In roentgenograms, innumerable bilateral calyceal stones were observed. The serum calcium content was 14.2 mg. per 100 cc. and the phosphorus content was 1.9 mg. per 100 cc. In a 24-hour urine specimen, the calcium content was 1.1 gm. per 100 cc. Hyaluronidase therapy was started December 12, 1950. X-ray films were taken at three- to four-week intervals and no new stones or growth of existing stones

Figure 7.—Ultropak microscopic view, × 2,500. Urine sediment from a white female with bilateral, renal calculi, and a severe urinary tract infection. The urine is full of aggregates of colloidal particles (non-protective colloid composed of degradation products of leukocytes, erythrocytes, bacteria and exudates) and one crystal near the center of the plate.

Figure 8.—Ultropak microscopic view, × 2,500. Urine of same patient as in Figure 7 thirty minutes after injection of hyaluronidase. Now forming in the urine are only highly solvated gel clusters which prevent further agglomeration and conglomeration of crystalloids.

was noted after therapy was begun. Urinary protective colloids were maintained at an elevated level (Figure 6). The patient passed no stones and had no symptoms after treatment was started.

Case 3. A woman 36 years of age who had had symptoms for five years passed stones composed of calcium phosphate and ammonium magnesium phosphate every two to three months. The content of protective colloids in the urine was low (Figure 7). Bacillus coli grew on a culture of the urine. A cluster of small stones in a dilated lower calyx on the left side and multiple small calyceal stones in the right kidney were observed in roentgenograms. Hyaluronidase therapy was started and protective urinary colloids were maintained at an elevated level (Figure 8). X-ray films were taken every one to two months and there were no new stones or enlargement of existing stones after nine months. There were no symptoms after hyaluronidase therapy was started.

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REFERENCES

1. Andreas, J. M., Hauser, E. A., and Tucker, W. R.: Boundary tension by pendant drops, J. Phys. Chem., 42: 1001-1019, 1938.

2. Balch, J. F.: Urinary calculus associated with pregnancy. A consideration of management with report of three cases, J. Urol., 47:705-710, 1942.

3. Butt, A. J.: Discussion of paper: Some urological complications of pregnancy, by Drs. Coplan, Woods and Melvin, Trans. Southeastern Section, American Urological Association, 76, 1950.

4. Butt, A. J.: Role of Protective Urinary Colloids in Prevention of Urinary Calculi—read before Alton Ochsner Medical Foundation, Annual Fellows Meeting, New Orleans, La., Oct. 13-14, 1950.

5. Butt, A. J.: Influence of protective urinary colloids in prevention of renal lithiasis, preliminary report, J. Florida M. A., 37:711-713, May 1951.

6. Butt, A. J.: Role of Protective Urinary Colloids in Prevention of Renal Lithiasis—read at 15th Annual Meeting of the Southeastern Section, American Urological Association, Memphis, Tenn., March 7 to 10, 1951. To be published J. Urol.

7. Butt, A. J., Hauser, E. A.: Importance of urinary colloids in kidney stone prevention—read at 25th Annual National Colloid Symposium, Cornell University, Ithaca, N. Y., June 18 to 21, 1951. In press, New England J. Med.

8. Butt, A. J., Hauser, E. A., Seifter, J., Perry, J. Q.: Renal Lithiasis: A New Concept Concerning Etiology, Pre-

vention and Treatment—read before Section of Urology, Southern Medical Association, Dallas, Texas, Nov. 5 to 8, 1951.

9. Douglas, J. W., Butt, A. J., Williams, W. L., Perry, J. Q.: Some Urological Complications of Pregnancy, to be published.

10. Flocks, R. H.: Calcium urolithiasis; the role of calcium metabolism and the pathogenesis and treatment of renal disease, J. Urol., 43:214-233, Jan. 1940.

11. Higgins, C. C.: Urinary lithiasis; experimental production and solution with clinical application and end results, J. Urol., 36:168-177, Aug. 1936.

12. Hirst, J. C.: The kidney of pregnancy, Tr. Am. Gyn. Soc., 54:33-36, 1929.

13. Keyser, L. D.: Urinary lithiasis, J. Urol., 50:169-190, 1943.

14. Lichtwitz, L., and Rosenbach, O.: Untersuchungen ueber Kolloide im Urin. I. Ueber Kolloide im normalen menschlichen, Urin. Ztschr. f. physiol. Chem., 1909, 61:112-118.

Lichtwitz, L.: Untersuchungen ueber Kolloide im Urin. II. Ueber Beziehungen der Kolloide zur Loeslichkeit der Harnsacure und Harnsauren Salze, Ztschr. f. physiol. Chem., 1910, lxiv, 144-157.

Ueber die Bedeutung der Kolloide fuer die Konkrementbildung und die Verkalkung. Deutsche med. Wchnschr., 1910, xxxvi, 704-706.

Die Bildung der Harnsedimente und Harnsteine. Ztschr. f. Urol., 1913, vii, 810-820.

Ueber die Bildung von Niederschlagen und Konkrementen im Harn und in den Harnwegen (Phosphaturie, Oxalurie, Uraturie, Cystinurie). Spez., Path. u. Therap. inn. Krankh. (Kraus and Brugsch), 1914, i, 239-296.

15. Prather, G. C., and Crabtree, E. G.: Impression relating to urinary tract stone in pregnancy, Urol. and Cutan. Rev., 38:17-24, Jan. 1934.

16. Randall, A.: Hypothesis for origin of renal calculi, New Eng. J. M., 214:234-242, Feb. 6, 1936.

Cardiac Arrest During Anesthesia

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SUMMARY

In cases of acute cardiac arrest from transient or reversible causes resuscitation is a distinct possibility. Prompt action is of the utmost importance.

The sequelae of cardiac arrest will depend on the degree of anoxia that has developed and the amount of irreversible damage to brain tissue. Efficient manual artificial circulation, begun immediately, can prevent such damage.

Four cases of cardiac arrest are described. Sudden circulatory collapse, which may or may not imply cardiac arrest, is not uncommon during surgical procedures. Usually the patient recovers quickly when treatment is prompt.

WHEN does death occur? There is no immediate criterion indicative of the transition from life to death. Years ago, cessation of respiration was considered synonymous with death. It was a common practice to hold a mirror in front of a patient's face and if there was no condensation of moisture from exhaled air, he was pronounced dead. When it was realized that the artificial maintenance of respiration could prevent death, the fallacy of this view became apparent. Cessation of cardiac activity superseded cessation of respiration as the criterion of death. But again a fallacy became apparent. Some patients were revived after cardiac arrest. Jut as a community is not dead when its transportation system fails, so the body is not dead when respiration or circulation fail. But just as a community will disintegrate and cease to be a community when the resulting starvation ravages its population and disrupts all coordinated effort, so it is with the body when the effects of respiratory or circulatory failure result in irreparable damage. Death does *not* occur until after there has been so much irreversible damage to nervous tissue that restoration of coordinated vital functions is impossible.

Respiratory arrest and cardiac arrest are very similar functional disorders and the principles applicable to one are equally applicable to the other. The apparent differences are chiefly those of relative urgency and relative accessibility. Depending on circumstances, respiratory arrest may persist from perhaps two to twelve minutes before irreversible damage results, because the oxygen in the lungs and blood acts as a reservoir. On the other hand, cardiac arrest will probably result in some irreversible damage in from two to four minutes. To counteract respiratory arrest by artificial respiration requires only moments because the respiratory mechanism is accessible. To counteract circulatory arrest by manual circulation is likely to require minutes. The margin of safety in this condition is much narrower.

It is fairly obvious that if the heart fails because of irreversible contributing circumstances such as severe hemorrhage, shock, or embolus, efforts at cardiac resuscitation are well-nigh hopeless. On the other hand, in cases of acute cardiac arrest from transient or reversible causes, resuscitation is a distinct possibility and any restorative measure, no matter how drastic, is justifiable.

As stated by Thompson and co-workers,[8] "acute cardiac cessation is conveniently classified into two groups: (1) arrest of stimulus formation or the so-called pace-maker failure, the result of which is cardiac standstill and (2) electrodynamic dissolution of the cardiac cycle, of which ventricular fibrillation is an example." The chances of successful resuscitation are greater in the case of cardiac standstill than in the case of ventricular fibrillation. Fortunately most cases fall into the former group. It is impossible to differentiate the two clinically unless the heart is already exposed or an electrocardiogram is in process.

ETIOLOGY

There are various circumstances which may lead to acute cardiac arrest:

1. *Reflex arrest* due to vagovagal stimulation. Such stimuli may arise from surgical trauma in the region of the aorta, the hilus of the lung, the carotid sinus or the vagus nerves. Weeks and co-workers[10] reported a case of cardiac arrest immediately following section of the vagus. It may also result from traction reflexes. Similarly, it has been postulated that anesthetic procedures irritating the tracheobronchial tree, such as intubation, may on occasion excite such reflexes. In certain cases, patients may be put into peculiar positions which result in reflex cardiac arrest.

2. *Direct trauma* to the heart, such as may occur during operations on the pericardium or heart or may be caused by inadvertent pressure of retractors on the heart or aorta, may cause cardiac arrest.

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3. *Overdosage of anesthetic agents* may depress the circulation, either by direct effect on the heart or by vasodilation. Chloroform, ethyl chloride and cyclopropane may have direct effects on the heart, particularly by altering the conduction mechanism or, in the case of chloroform and ethyl chloride, by direct depression of the myocardium.

4. *Ventricular fibrillation.* The heart, sensitized by certain anesthetic agents, may react by ventricular fibrillation if subjected to an overdose of epinephrine. This epinephrine may be introduced by injection or may be endogenous, coming from the adrenal glands if there is stimulation or excitement during light anesthesia.

SIGNS OF CARDIAC ARREST

It is sometimes difficult to be certain whether the heart has actually stopped during a surgical procedure or whether its beats are so feeble that there is little evidence of circulation. Therefore all possible means should be utilized to make a rapid evaluation of the situation. The following points should be observed:

1. *Absence of pulsation.* If the anesthetist is feeling the pulse at the time cardiac arrest occurs, he will notice the sudden absence of pulsation. More often, however, other indications precede this and call the anesthetist's attention to the emergency. He then attempts to feel the pulse but finds that he cannot detect it. There will also be no visible pulsation in the neck. The surgeon may have access to a large artery which he may palpate to determine if there is any pulsation.

2. *Absence of blood pressure.* If attempts are made to determine the blood pressure, it will be found that no audible or visual pulsations occur.

3. *Respiratory arrest.* The most common initial indication of cardiac arrest is the almost immediate cessation of respiration due to cerebral anoxia. There may be a few gasps preceding this. In all cases of respiratory arrest, one of the anesthetist's first obligations is to feel for the pulse and determine if the circulation is satisfactory.

4. *Pallor or cyanosis* quickly follows cardiac arrest. The actual color will depend somewhat on the peripheral distribution of blood, and the position of the patient is a factor. The blood will gravitate to the dependent parts of the body. If the head is elevated, pallor of the upper part of the body may be expected. If the head is lowered, congestion and deep cyanosis may develop.

5. *Cardiac sounds* cannot be heard over the precordium.

6. *Absence of bleeding* in the wound may be observed. The surgeon may be requested to incise a moderate-sized artery to see if it will bleed.

7. *Direct observation of heart.* If the surgeon is performing a transthoracic operation, he may observe the state of the heart directly. If he is performing an abdominal operation, he may palpate the heart from below the diaphragm.

8. *Dilation of the pupils* may develop as anoxia progresses.

9. *The capillary refill time* as determined by pressure on the skin, and the duration of the resulting pallor, may be of some significance.

PROPHYLAXIS

Since in many cases cardiac arrest results from vagal stimulation, it is advocated that adequate atropinization be used when there is serious likelihood of stimulation in one of the more sensitive areas. Similarly, blocking of the afferent stimuli by infiltration with a local anesthetic agent in areas such as the hilus of the lung may prevent the condition. In cases in which trauma near the hilus of the lung, the heart or the pericardium causes arrhythmia, the injection of 5 cc. to 10 cc. of 1 per cent procaine solution intravenously may relieve the condition and prevent cardiac arrest. Direct application of procaine to the heart during cardiac operations is sometimes utilized, although the value of this is more questionable.

TREATMENT OF ACUTE CARDIAC ARREST

As has been emphasized by Bailey,[2] time is of the utmost importance and a preconceived plan of action should be followed in order to avoid any unnecessary delay. Bailey stressed the value of keeping an accurate check on the time which has elapsed from the onset of the emergency, and he advocated that one person in the operating room be delegated at once to be the time-keeper and to call off the passing minutes. Whether this is done or not, it is vitally important that the duration of the emergency be carefully observed and that the routine of action be gauged according to the time which has elapsed. All anesthetists should have some such routine in mind, and it will probably be found that surgeons will respond and cooperate if the anesthetist demonstrates his knowledge of the situation and his competence to direct procedures. The following is an outline of a routine which may be followed.

1. *Immediate.* As soon as cardiac arrest is suspected, several things should be done almost simultaneously. Since only a matter of seconds need elapse until all are instituted, the exact order is unimportant:

(a) Notify the surgeon of the suspected emergency.

(b) Lower the head of the table to a Trendelenburg position of 10 to 15 degrees.

(c) Discontinue the administration of the anesthetic agent and substitute pure oxygen or air.

(d) Correct any situation which has possibly contributed to the emergency. The possibility that an anesthetic agent is being administered inadvertently, as by leaving the valve of an ether bottle open, should be considered. Patients have died because anesthetists have persisted in resuscitative efforts without realizing that they were continuing to administer a hgh concentration of ether or that they were erroneously using nitrous oxide instead of

oxygen. Any recent manipulation by the surgeon which might have precipitated a vagovagal reflex should be discontinued. Any change of position which has been followed by circulatory collapse or cardiac arrest should be corrected.

(e) The anesthetist should immediately look at his watch and make an accurate note of the time of onset of the emergency. An alternative is to follow Bailey's method and delegate someone in the room to watch the time.

(f) Most important of all, artificial respiration should be instituted at once and continued throughout, with two exceptions noted below. If the anesthetist is sure that there is no error in the apparatus, inflation of the lungs with pure oxygen by means of pressure on the breathing bag is a desirable method. If he is in doubt about the machine or does not have one immediately available, then mouth-to-mouth or mouth-to-nose respiration is the best substitute. If the patient is anesthetized with an agent which is eliminated through the lungs, provision must be made for a free elimination of the exhaled atmosphere. Thus, in case of overdosage of an inhalation agent, one must not use the carbon dioxide absorption technique with only a maintenance flow of oxygen. The technique may be used but there must be a sufficiently rapid flow of oxygen (at least six liters per minute) to provide rapid elimination of the exhaled atmosphere. It was observed in animal experiments by Thompson and co-workers[8] that artificial respiration with alternating positive and negative pressures, such as is produced by certain resuscitators, is more effective in restoring cardiac activity than mere intermittent inflation. However, such resuscitators may not be available. Artificial respiration by means of positive pressure has a distinct effect in producing some peripheral circulation. This is brought about by the increased intrathoracic pressure compressing the heart and squeezing the blood out. Although in some cases cardiac arrest may be relieved merely by this form of cardiac stimulation, it must not be assumed that vital functions are maintained by this propulsive effect on the blood. Volpitto and co-workers[9] demonstrated that the two most important parts of the circulation—namely, that in the cerebral and in the coronary arteries—are not influenced by this kind of artificial circulation.

If possible, an endotracheal tube should be inserted. However, delay for this procedure cannot be countenanced unless inflation of the lungs is otherwise impossible because of obstruction. The endotracheal tube has several advantages. It insures a free respiratory exchange and it obviates the possibility that the stomach may be inflated with oxygen which passes down the esophagus.

2. *During the first minute.* If positive evidence of cardiac arrest is not immediately available, the first minute may be occupied with efforts to determine the actual situation. If the surgeon can immediately feel or see the heart and verify its inactivity, the procedure described under (4) below should be started immediately. Occasionally an arrested heart may be stimulated by thumping over the precordium. Therefore this type of stimulation may be attempted during the first minute but it should not in any way supersede the other efforts described.

3. *During the second minute.* If evidence of cardiac activity has not been elicited, it should be assumed that there is cardiac arrest and this minute should be utilized to make preparation for gaining direct access to the heart, either through an upper abdominal or thoracic incision. The surgeon should be notified of the necessity for this and should make his preparations. If possible, the field should be disinfected and sterile drapes and instruments obtained. However, since nothing can take precedence over the problem of reestablishing circulation, these details may be modified according to facilities available. During this minute, further observations regarding pulse, heart sounds, etc., are made so that if cardiac activity resumes it will be noted.

4. *During the third minute.* If, at the end of two minutes, there is still no evidence of circulation, the surgeon should proceed with the incision which he has elected and gain access to the heart. If, under direct observation or palpation, no heart beat is apparent, manual artificial circulation should be instituted and maintained until spontaneous contractions return or all efforts are considered to be of no avail. The rhythmical squeezing of the heart has two purposes: first, to propel blood and maintain circulation and, second, to stimulate the cardiac muscle in the hope of restoring spontaneous activity.

When artificial respiration and manual artificial circulation are maintained, the urgency of the situation is relieved. Oxygenation of vital tissues is maintained. Ample time may be taken to relieve the cardiac arrest by other means if necessary. Adams and co-workers[1] reported successful resuscitation with complete recovery after 20 minutes of cardiac arrest. It must be emphasized that in that case the heart was under direct observation and manual artificial circulation was instituted immediately after the arrest occurred so that oxygenation of the tissues was not impaired throughout the 20 minutes. (It is well to note in passing that the term "cardiac massage," which so often is used to describe the manual rhythmical squeezing procedure, is misleading. In one case, to be described later, an orthopedic resident heroically responded to the anesthetist's request that an abdominal incision be made and "cardiac massage" performed. However, it appears that the manipulation he carried out was indeed "massage" in the generally understood meaning of the word.)

The surgical approaches to the heart are (1) transperitoneal, either subdiaphragmatic or transdiaphragmatic; and (2) transthoracic, either extrapleural or intrapleural.

For the subdiaphragmatic approach, a high midline or left paramedian incision should be made. The surgeon then inserts one hand under the diaphragm and places the other over the precordium. The heart is then squeezed between the hands forc-

ibly and rhythmically at the rate of about 60 times per minute. As this method is tiring and not completely efficient, the transdiaphragmatic approach may be added: The diaphragm and adjacent pericardium are incised to permit one hand to be inserted. The heart is grasped in it and rhythmic squeezing continued.

The transthoracic approach is regarded as the one of choice by Barber and Madden.[3] Naturally, if an intrathoracic operation is in progress, this provides a transpleural approach, and access to the heart is obtainable immediately. If it is necessary to incise the thorax. the following method described by Barber and Madden is simple and satisfactory: "Exposure of the heart through a transverse incision in the third or fourth interspace is adequate and readily performed. The incision extends from the anterior surface or left border of the sternum, transversely to the left nipple or anterior axillary line. The incision is deepened through the underlying fascia and muscle layers and the corresponding intercostal space. The adjacent costal cartilages above and below are sectioned and the corresponding ribs widely retracted. The production of pneumothorax is avoided if possible, but it is of no undue consequence if it should occur."

This approach has several advantages. It permits direct observation of the heart so that its actual condition can be verified, and direct application or injection of drugs is facilitated. The maintenance of manual artificial circulation is easier because of the more adequate access to the heart.

5. *Ventricular fibrillation.* If ventricular fibrillation is apparent on inspection of the heart or if it is seriously suspected, certain specific measures aimed at stopping the fibrillation may be instituted. One is to inject 5 to 10 cc. of 1 per cent procaine solution into the right auricle or the left ventricle. This reduces the irritability of the myocardium and facilitates response to normal pace-maker activity. Another method is the use of electrical stimulation of the heart, as done in animal experiments by Prevost and Battelli[7] and as described for application to humans by Beck.[5] Two large electrodes are placed on opposite sides of the heart and shocks of 1 to 1.5 amperes produced. The shock is applied for a fraction of a second. If one shock does not stop ventricular fibrillation, a second and third may be given.

6. *Analeptic drugs.* With artificial respiration and manual artificial circulation in progress, there is no urgency about using other and perhaps hazardous methods. However, intracardiac injection of an analeptic drug may be resorted to if other measures appear to have no effect. The mere passage of a needle through the myocardium may be sufficient to stimulate normal cardiac activity. The injection should be made into the right auricle, since this brings the stimulus near to the pace-maker. A 4½-inch needle should be inserted through the second or third intercostal space immediately to the right of the sternum and directed posteriorly and inferiorly until blood can be withdrawn from the cavity of the heart. The injection is then made. Some investigators have suggested the injection of some of the analeptic drug into the myocardium. However, if epinephrine is used, there is some danger that it may result in local ischemia and infarction. Trauma to a coronary artery caused by the needle, although unlikely, can occur. Sequelae of such a complication should be kept in mind postoperatively. Analeptic drugs suggested have included epinephrine, Coramine® and Metrazol.® There is a tendency to give too much; 0.5 cc. of epinephrine in 1:1,000 solution should be sufficient. If there is no response in a reasonable time, the injection may be repeated. In many cases the injection of epinephrine into the heart has been used before resorting to manual artificial circulation, and in some instances it has proved effective. However, there are reasons why this is injudicious and the apparently more radical method of gaining direct access to the heart should have priority. In the time taken to obtain and to inject epinephrine and in the further delay to see if it has been effective, anoxemia may progress to the point of causing irreversible damage before manual artificial circulation is eventually instituted. Also, epinephrine may cause ventricular fibrillation. Thus if it is injected into a heart which is still beating feebly or which is in standstill, it may cause ventricular fibrillation from which there is much less likelihood of recovery.

The addition of even low concentrations of carbon dioxide to the inhaled atmosphere has been observed by Eastman and Kreiselman[6] to be detrimental.

7. *Interruption of artificial respiration.* As previously mentioned, there are two occasions during which the artificial respiration, otherwise maintained continuously, should be interrupted. One is during the incision of the chest wall or abdominal wall. If the chest wall is being incised, inflation of the lung may result in inadvertent incision of the pleura and lung. During incision of the abdominal wall, respiratory movements may increase the possibility of accidental incision of the stomach. Incidentally, if the lungs have been inflated during the procedure without an endotracheal tube being in place, there is every likelihood that the stomach will be distended and it is advisable to warn the surgeon of this fact. The second occasion on which artificial respiration should be interrupted is during the insertion of a needle into the heart. Inflation of the lung at the wrong time may result in laceration of the pleura or puncture of the lung.

8. *Inflation of the stomach.* As already mentioned, the stomach is likely to be inflated during some kinds of artificial respiration. It may be deflated from time to time during the resuscitative procedure by pressure on the epigastrium. At the end of the resuscitative efforts, whether the patient has recovered or been pronounced dead, the stomach should be deflated if it appears to be distended. This may require the insertion of a gastric tube. If the patient

is alive, the distended stomach may hamper respiration and circulation. If the patient is dead, the pathologist performing the autopsy may be misled into a diagnosis of acute dilation of the stomach if it has not been deflated.

9. *Duration of resuscitative efforts.* If there was no undue delay in instituting artificial circulation and if there is no added cause of anoxia, the resuscitative efforts may be continued for at least an hour before hope is abandoned.

SEQUELAE OF PROLONGED CARDIAC ARREST

Cardiac arrest is not in itself the cause of death or of subsequent pathologic conditions. It is only a functional disturbance. It is the resulting anoxia that causes damage, particularly to the nervous system where the damage rapidly reaches an irreversible degree. If this damage is sufficiently extensive, resuscitative measures will fail completely. Unfortunately, various degrees of damage resulting in permanent neurologic changes may occur. In many cases, cardiac and respiratory activity may be restored temporarily only to fail hours or days later. Hyperpyrexia may develop. In many other cases the patient may live for an indefinite period but with neurologic damage as manifest by dementia, spastic paraplegia, blindness, etc. Weinberger and co-workers,[11] working on cats, clamped the pulmonary artery for periods ranging from two minutes to ten minutes and fifteen seconds and analyzed the amount of damage resulting. In these experiments, arrest of the circulation for three minutes and ten seconds or less resulted in no neurologic disturbances. When the period was extended to three minutes and 25 seconds, changes in behavior and psychic functions occurred. After six minutes of circulatory arrest, vision and sensation were permanently impaired. After seven minutes and 35 seconds, there were permanent dementia, blindness, sensory and auditory defects, motor and postural defects and reflex abnormalities. After eight minutes and 45 seconds or longer, life could not be restored for more than a few hours. The human brain is probably more susceptible to anoxia than is that of cats.

In cases in which death occurs within a few hours after restoration of cardiac activity, there is usually pulmonary damage resulting in pulmonary edema.

INCIDENCE

It is impossible to estimate the actual incidence of cardiac arrest during anesthesia. There are many cases in which absence of pulse and blood pressure and respiration and other signs point to this diagnosis but in which the patient recovers promptly during the first minute or so of treatment. Barber and Madden[4] stated in 1945 that they had been able to collect from the literature reports of a total of 143 cases of "cardiac massage," with complete recovery in 48 cases (33 per cent). Many more cases must have occurred which are not in the literature.

At the Research and Educational Hospitals from September 1937 until May 1947, there were nine cases in which manual artificial circulation was carried out following sudden cessation of cardiac activity. One of the patients had a large pulmonary embolus and could not have recovered. Of the eight remaining, two made complete recoveries and two recovered temporarily but died, one in two hours and the other in 69 hours. During the same period there were eight other cases in which the patient died but in which radical measures were not tried. In several of those cases death was caused by neurologic disturbance.

The following cases are illustrative of certain features previously described.

A three-year-old boy who had been born with amputation of both thighs and was scheduled for reamputation of one thigh was anesthetized by open drop technique with ethyl chloride and ether. The ethyl chloride was discontinued early in the induction. A tourniquet was applied to the thigh prior to the operation. Thirty minutes after the operation started, the child's condition appeared to be good. The tourniquet was removed and the patient immediately became pale and pulseless and did not breathe. The anesthetist did not institute artificial respiration or other resuscitative measures and two or more minutes elapsed before another anesthetist who was called in lowered the patient's head and instituted mouth-to-mouth breathing. When there was no improvement, the orthopedic resident was asked to perform "cardiac massage." An abdominal incision was made and the cardiac massage was begun subdiaphragmatically. (In this case it appeared that the surgeon rubbed the heart in the manner of a masseur and did not institute efficient manual artificial circulation.) A few cardiac beats occurred but the action did not persist. Epinephrine, 0.5 cc., was injected into the right auricle. Spontaneous cardiac activity was restored, and spontaneous respirations followed. At first they were gasping but gradually they improved. Probably at least ten minutes had elapsed from the time of cardiac arrest until efficient circulation was restored. The abdomen was closed and the orthopedic operation completed. The patient was returned to bed and put in an oxygen tent. Twitching of the eyes, face and neck and hands was observed and pulmonary edema developed. The patient died two hours after the end of the operation. At autopsy, atelectasis of the right lung and congestion of the left, secondary to the pulmonary edema, were noted. A small incision in the stomach which had not been evident to the surgeon was observed. This had no bearing on the patient's death.

This case illustrates the importance of instituting effective treatment early. If artificial respiration had been started immediately, and efficient manual artificial circulation instituted within three minutes, the cerebral and pulmonary damage due to anoxia would probably not have occurred and restoration of cardiac activity might have restored the child to a healthy condition. The misleading implication of the term "cardiac massage" is illustrated, as is the importance of care not to damage the stomach in such procedures.

The patient was a 51-year-old obese female with cholecystitis and obstructive jaundice. There was no record of cardiac disturbance. Before anesthesia the blood pressure was 120 mm. of mercury systolic and 80 mm. diastolic. The pulse rate was 84. Pontocaine, 16 mg., was given intraspinally and anesthesia reached the fourth thoracic seg-

ment. Neosynephrine, 0.5 cc., then was given. Before the start of the operation, the blood pressure was 90 mm. of mercury systolic and 50 diastolic. Ten minutes after the beginning of the operation, just after the gallbladder lift had been raised and while the surgeon was palpating above the liver, the blood pressure could not be obtained, the pulse could not be felt and respirations ceased. Artificial respiration was started immediately. The surgeon palpated the heart and could detect no activity. Manual artificial circulation was instituted immediately by the subdiaphragmatic route and cardiac action returned very quickly. Following this, 1 cc. of epinephrine in 1:1,000 solution was injected into the heart. Spontaneous respirations were resumed. The whole episode probably lasted about two minutes. Following it the blood pressure rose to 200 mm. of mercury systolic and 140 mm. diastolic, then in the course of 20 minutes gradually decreased to 80 mm. systolic and 50 mm. diastolic. The stomach, which had been inflated during the artificial respiration, was deflated by insertion of a gastric tube. The remainder of the operation was uneventful. At the end of the operation the patient was awake and responsive and there was no evidence of damage. Oxygen therapy was given and recovery was satisfactory, although it was complicated by some consolidation of the upper lobe of the right lung.

This case illustrates the desirable result which may be obtained when artificial circulation is instituted promptly. The fact that an abdominal operation was in progress contributed to the speed with which this treatment was started. The injection of epinephrine was unnecessary and therefore injudicious. The cause of the arrest was probably reflex due to the surgical manipulation above the liver. That it occurred during spinal anesthesia is of interest.

A 17-year-old girl with mediastinal tumor was otherwise in good physical condition. The preoperative blood pressure was 120 mm. of mercury systolic and 55 mm. diastolic, and the pulse rate was 88. The patient was anesthetized with cyclopropane and intubated with an orotracheal tube with a cuff. Anesthesia was maintained in the low second plane. Controlled respirations were started 12 minutes after the operation started. The left pleural cavity was opened and the surgeon proceeded with the dissection of the mediastinal tumor. A blood transfusion was started 50 minutes after the beginning of the operation. An hour and 15 minutes after the start of the operation, while the surgeon was working in the left hilar region, the temporal pulse suddenly disappeared and the blood pressure could not be obtained. About 30 seconds later the surgeon was asked to examine the heart which was hidden by packs and a retractor. It was found to be in a state of standstill. Manual artificial circulation was immediately started, artificial respiration having been carried on during the entire time. About two minutes later, spontaneous cardiac activity was resumed, the heart rate being 104. Controlled respirations were continued and the operation completed 90 minutes later. Throughout this period, the pulse and blood pressure could not be obtained but the color of the blood was good and cardiac action could be observed. No addition of the anesthetic agent was necessary. There was some difficulty in administering fluids rapidly. The pulse and blood pressure were not obtainable until an hour after completion of the operation. At that time the pulse rate was 150 and the systolic blood pressure 80 mm. of mercury. The pulse rate rose as high as 200 but later returned to 130. The blood pressure slowly rose to 90 mm. of mercury systolic and 70 mm. diastolic. Postoperatively the temperature ranged from 101° to 104° F. On the third day tension pneumothorax was noted and several hundred cubic centimeters of fluid and air were removed. There were no signs of neurologic damage and the patient left the hospital in good condition.

In this case the cardiac arrest was probably due to reflex stimulation in the region of the hilus of the lung. The local use of procaine in this area or the intravenous injection of procaine or the administration of a large dose of atropine might have prevented the cardiac arrest. Prompt initiation of the artificial circulation resulted in complete recovery. When cardiac arrest is suspected, the anesthetist should not hesitate to interrupt the surgeon and call for his cooperation in making the diagnosis and in instituting treatment.

A 59-year-old woman with left hemiparesis as a result of a previous cerebral accident was operated upon for repair of evisceration four days after colostomy. Anesthesia was induced with cyclopropane with the canister out. Three minutes or less after the beginning of anesthesia the respirations became inadequate, the color was poor, and the pulse feeble. The anesthetic agent was stopped and pure oxygen was administered. A minute later neither blood pressure nor pulse was obtainable and respirations ceased. An endotracheal tube was inserted and artificial respiration was instituted immediately. The surgeon was notified of the seriousness of the situation and after three minutes of repeated urging he palpated the heart from below the diaphragm and reported no pulsation. Manual artificial circulation was then instituted. In 20 seconds a few weak beats were felt and five minutes later the heart was beating regularly at 120 beats per minute. Neosynephrine, 3 mg., was then given intramuscularly. Spontaneous respiration began 10 minutes after resumption of spontaneous cardiac activity. Oxygen was administered while the wound was being closed. When the patient left the operating room the blood pressure was 80 mm. of mercury systolic and 40 mm. diastolic, and the pulse rate was 120. The endotracheal tube was left in place and oxygen was continued on the ward. The patient died 69 hours postoperatively without having regained consciousness.

The previously existing brain damage probably made the nervous tissue more susceptible to anoxia, thus accounting for the fatal outcome in spite of the relatively early institution of manual artificial circulation. This case illustrates well the need for complete cooperation among the members of the operating room team and for a course of action based on a plan previously discussed.

CIRCULATORY COLLAPSE

There are many cases in which sudden circulatory collapse becomes apparent. It frequently occurs during rapid induction of general anesthesia. If neglected, it can go on to a more serious or even fatal outcome, whereas prompt initiation of artificial respiration and lowering the head results in prompt recovery. Whether any cases of circulatory collapse can truly be classified as cardiac arrest is uncertain, but undoubtedly many would rapidly fall into that classification if treatment were delayed.

A six-month-old girl was scheduled for lens extraction. Anesthesia was started with ethyl chloride by the open drop technique. Probably the ethyl chloride was allowed to flow

too freely and too long. About the time that the patient was in low second stage, ether was started but a little more ethyl chloride was added with it. Excess mucus developed. Obstruction, with little effort to breathe, followed. Respiration ceased, the pulse was not palpable, the heart beat was neither palpable .nor audible, and there was pronounced prolongation of the capillary refill time. To all appearances the heart was in complete arrest. A few efforts to squeeze the chest and produce artificial respiration were ineffective. The child was turned for a brief period to the prone position to drain mucus from the mouth. An airway was inserted and mouth-to-mouth repiration was started. Spontaneous respirations were resumed after a few inflations and evidences of adequate circulation returned almost immediately. During the mouth-to-mouth respiration it was noted that considerable air was being blown into the stomach. This was expelled once by pressure on the epigastrium but the stomach became distended again; and after the child resumed normal respirations, the air could not be expelled in the same way. It was released through a Levine tube passed into the stomach. Anesthesia was continued for some time with ether, and was uneventful. The operation was cancelled not because of the circulatory collapse but because the surgical preparation had not been adequate. The child was anesthetized on a subsequent occasion without untoward effect.

In this case the circulatory collapse was probably due to some direct depressant effect of ethyl chloride on the myocardium. In such cases it appears that further anesthesia with another agent and continuance of the operation is not contraindicated because the episode does not necessarily indicate any inherent circulatory weakness.

An obese 61-year-old male patient was to have gastric resection for carcinoma. Edema of the ankles and pulmonary emphysema were noted preoperatively. The blood pressure was 130 mm. of mercury systolic and 80 mm. diastolic. Anesthesia was begun with cyclopropane by the closed technique. Orotracheal intubation was done with some difficulty, after which a canister was inserted. A few minutes after intubation the patient's pulse and blood pressure were unobtainable and respirations ceased. The lungs were inflated several times by pressure on the bag and almost immediately spontaneous respirations were resumed, the pulse became palpable at a rate of 70 and the blood pressure was 120 mm. of mercury systolic and 80 diastolic. At this time ether was started and cyclopropane gradually eliminated. The blood pressure rose to 160 mm. systolic and 90 diastolic, and the pulse rate to 108. Throughout the next three hours there was a gradual fall in blood pressure to 65 mm. systolic and 50 diastolic and a gradual slowing of the pulse to 56. No anesthetic agent was added for the last hour of anesthesia, and during the four and one-half hours of the operation the patient received 800 cc. of saline solution and 1,400 cc. of blood. Just as the last suture was being put in, the anesthesia was discontinued and a catheter was inserted through the endotracheal tube to aspirate secretions. The patient became cyanotic and respirations ceased. Artificial respiration with oxygen was started. The blood pressure and pulse could not be obtained. No radical procedures were instituted; and when the circulation did not return, the patient was pronounced dead.

At autopsy, extreme fatty infiltration of the heart was noted. The auricles particularly were almost replaced by fatty tissue. There was pronounced atherosclerosis of the coronary arteries. Partial atelectasis of the left lung was present; it was probably a terminal development, unrelated to the circulatory failure.

This case illustrates several interesting points. The anesthetists did not regard the initial circulatory collapse as an ominous sign and did not call it to the attention of the surgeon, who would have been willing to cancel or curtail the operative procedure. As the patient was obese, fatty infiltration of the myocardium might have been suspected and the emphysema might have been considered as a contraindication for anesthesia and operation. In such a case the early circulatory collapse should have been taken as a warning that the patient could not tolerate much trauma.

Circulatory collapse is a dangerous complication and may lead directly to death. Once the acute episode has been relieved, evaluation of its significance depends on various circumstances. If the patient is young and healthy and the episode has occurred during induction with an agent which may directly depress the heart, such as ethyl chloride, it may be assumed that it does not signify serious circulatory disease, and it is usually justifiable to proceed with the scheduled operation. Conversely, if the patient is old, obese, debilitated or has known cardiac disease, and if the agent was one which normally does not depress the heart, such as ether, circulatory collapse must be assumed to be ominous of serious impairment of the circulatory mechanism. The operation should be cancelled unless it is imperative for the patient's welfare. If it must be done, a minimal procedure should be selected; and, if possible, it should be postponed to a later date.

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REFERENCES

1. Adams, H. D., and Hand, L. V.: Twenty-minute cardiac arrest with complete recovery, J.A.M.A., 118:133-135, Jan. 10, 1942.

2. Bailey, Hamilton: Cardiac massage for impending death under anesthesia, Brit. Med. J., 2:84-85, July 19, 1941.

3. Barber, R. F., and Madden, J. L.: Resuscitation of the heart, Am. J. Surg., 44:151-168, May 1944.

4. Barber, R. R., and Madden, J. L.: Historical aspects of cardiac resuscitation, Am. J. Surg., 70:135-136, Oct. 1945.

5. Beck, C. S.: Resuscitation for cardiac standstill and ventricular fibrillation occurring during opcration, Am. J. Surg., 54:273-279, Oct. 1941.

6. Eastman, N. J., Dunn, R. B., and Kreiselman, J.: Relative value of pure oxygen and of carbon dioxide mixtures in experimental resuscitation, Am. J. Obst. and Gyn., 36:571-579, Oct. 1938.

7. Prevost, J. L., and Battelli, F.: Sur quelques effets des discharges electriques sur le coeur des maniferes, Comp. rend. Acad. d. sc., 129:1267, 1899.

8. Thompson, S. A., Birnbaum, G. L., and Shiner, I. S.: Cardiac resuscitation, J.A.M.A., 119:1479-1485, Aug. 29, 1942.

9. Volpitto, P. P., Woodbury, R. A., and Abren, B. E.: Influence of different forms of mechanical artificial respiration on pulmonary and systemic blood pressure, J.A.M.A., 126:1066-1068, Dec. 23, 1944.

10. Weeks, C., Ryan, B. J., and Van Hoy, J. M.: Two deaths associated with supradiaphragmatic vagotomy, J.A.M.A., 132:988-990, Dec. 21, 1946.

11. Weinberger, L. M., Gibbon, M. H., and Gibbon, J. H., Jr.: Temporary arrest of the circulation to the central nervous system, Arch. Neurology and Psychiatry, 43:615-634, April 1940.

The Use of Banthine in the Treatment of Digestive Disturbances

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SUMMARY

Banthine® was used in the treatment of patients with various diseases, organic and functional, of the gastrointestinal tract. Good response was obtained in a high proportion of cases of duodenal, stomal and gastric ulcer, and of hypertrophic gastritis. In some instances, patients who did not have good response at first were relieved later when the size of doses and the dosage schedule were adjusted to fit their particular needs.

Some patients "felt so well" during Banthine therapy that they departed from prescribed diet and violated injunctions against use of alcohol and tobacco, and symptoms recurred.

Nine patients with history of recurrent bouts of pain from ulcer for several years took small doses of Banthine constantly, or occasionally at times of stress, as a prophylactic measure after the symptoms were relieved by therapeutic doses. None of them had recurrence while following the prophylactic regimen.

In most of the cases of peptic ulcer in which the response was recorded as "poor," it was because distressing side-effects dictated discontinuance of the drug. Several elderly male patients had severe urinary retention. Paralytic ileus developed postoperatively in one patient who was receiving Banthine. Less severe side reactions—dry mouth, blurring of vision, urinary slowing — were for the most part transient.

Few patients with functional indigestion, chronic non-specific colitis or regional enteritis were relieved. Most of the patients with functional indigestion reported exacerbation of symptoms when Banthine was given. This was believed to be based on emotional reaction to the hypomotility induced by the drug.

SINCE its introduction to the medical profession two years ago, the newly described quaternary ammonium compound, Banthine® (B-di-ethyl-amino-ethyl xanthene-9-carboxylate methobromide) has been widely employed in the therapy of peptic ulcer as well as in other digestive disturbances in which it is believed that a drug with anticholinergic properties might be of therapeutic value.[4, 5, 6] The therapeutic value of Banthine is apparently due to its atropine-like effect in blocking postganglionic parasympathetic endings in the gastrointestinal tract.[3, 7] In man, Banthine is known to have a definite depressing effect on gastrointestinal motility[1, 4, 5, 6] and on the volume of gastric acid, although the degree of acidity is not greatly influenced.[1, 3, 4, 6, 7] It does not consistently block gastric acid secretion in man after insulin hypoglycemia[6, 7] but the drug does suppress the gastric secretory response to histamine.[3, 7] One striking effect of Banthine therapy is that frequently the pain of ulcer is relieved within a short time after administration of the drug has been started.[1, 4] The mechanism for this relief of abdominal pain is not clearly understood.

There are certain side effects of Banthine therapy which are quite disturbing to some patients when they are first given the drug. Although there are individual variations in the type and degree of the reactions, the most annnoying to the patient include dry mouth, blurred vision and, in males, urinary suppression. The latter reaction is noted primarily in older males with prostatic hypertrophy and it may be so pronounced that Banthine therapy must be discontinued. Certain psychic reactions have also been reported,[2] and a small group of patients has been seen in which Banthine therapy actually aggravates preexisting psychogenic digestive disturbances. This latter group will be discussed in this report. However, in general side effects subside spontaneously after 48 to 72 hours of treatment.

MATERIAL AND METHOD

The majority of the patients observed in this study were treated either on the gastrointestinal ward at the Wadsworth General Hospital or in the out-patient gastrointestinal clinic at the Cedars of Lebanon Hospital. In addition to these two sources of clinical material, certain patients treated privately, some by the author and others by two colleagues, have been included. The study includes patients

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Much of the Banthine employed in these studies was supplied through the kindness and cooperation of Dr. Irwin C. Winter of G. D. Searle and Company.

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from many social, economic and racial groups with illnesses varying greatly in nature and severity.

Unfortunately in a study of this sort it is impossible to establish rigid controls to evaluate the results of therapy. This is owing to the very nature of the illnesses treated, largely psychosomatic in character. Patients with psychosomatic disease will respond well to new medical regimens simply through suggestion. In many of the cases there are no good objective methods for determining improvement. In the case of peptic ulcer, it is possible to repeat the x-ray examinations of the stomach and duodenum at various time intervals to determine, roughly, healing by x-ray criteria. However, in busy hospital and clinic services this is not always feasible. In patients with spastic colon, functional indigestion and similar disturbances of the normal condition of the bowel there are no adequately objective methods for evaluating the degree of illness or the degree of response to therapy. Therefore, in this study each patient was his own control. The patients were observed at frequent intervals and attempts were made to obtain from them accurate descriptions of their subjective response to therapy; and, wherever it was possible, a statement was obtained from the patient comparing his response to Banthine with his response to previously prescribed medical regimens for the same disturbance.

In some cases two additional means of gauging the response of the patient to Banthine therapy were employed. The first of these involved starting a patient with a new untreated functional digestive disturbance on one of the older established medical regimens for a short time. After the patient manifested some subjective response to the first regimen this was stopped and Banthine therapy was initiated. A second method involved the administration of Banthine placebos. Patients did not respond in any way to placebo therapy. This seems to rule out pure suggestion as an important element in this study.

Although some of the patients in this series were observed for only short periods of treatment with Banthine, others, especially those with peptic ulcer, had been taking the drug for about ten months at the time of report.

Patients with various disturbances of the gastrointestinal tract were treated. The largest single group of patients consisted of those with peptic ulcer. The three types of benign peptic ulcer treated are considered together since the underlying pathologic changes in each type are essentially similar. The next largest group consisted of patients with indigestion, gas, nausea, spastic colon and other vague gastrointestinal complaints of nervous origin.

Because of the nature of their response to Banthine therapy, patients with chronic, non-specific ulcerative colitis and regional enteritis were listed separately. Patients with symptomatic chronic hypertrophic gastritis were considered with the peptic ulcer group. Such patients have gastric hyperacidity and hypermotility similar to that observed with peptic ulcer, and often they have distress of a similar type.

A small group of patients in this series was listed as having "other diseases," including sprue syndrome, dumping syndrome, biliary dyskinesia, chronic pancreatitis, and esophageal hiatal hernia. In this group there were not enough patients with any one diagnosis to permit adequate evaluation of therapy, but it was felt that certain comments could be made about the response of these patients to Banthine.

In expressing the results of Banthine therapy three grades of response were tabulated. A "good" response implies that objectively and subjectively Banthine therapy was highly satisfactory. "Fair" response indicates that it was felt that the patient obtained symptomatic relief from the drug but that the relief was no greater than was obtained by other regimens or that the results fell short of being actually ideal. Classified as "poor" response was any in which symptoms were aggravated by the drug or the drug had to be discontinued because of disturbing side effects. Also when untoward side effects of a psychogenic nature occurred, the response was considered "poor."

RESULTS

Peptic Ulcer

In the small group of patients with gastric ulcer, the response is either very satisfactory or quite poor (Table 1). Both of the patients who had poor response had intractable pain. One of the patients in addition was highly nervous and this nervousness was increased during the time that he was receiving Banthine. Of the three patients who responded well to Banthine, two eventually had gastric resection because of unsatisfactory x-ray evidence of healing of the lesions. In both cases, the ulcers were benign.

All of the patients with stomal ulcer became asymptomatic while they were receiving Banthine. Only one had a recurrence of trouble. Bleeding, without pain, developed and gastroenterostomy was carried out.

The majority of patients with duodenal ulcer responded well to Banthine therapy. In the "good" and "fair" response groups, however, not all the patients could be given symptomatic relief by Banthine alone. In all cases, patients with ulcer were directed to follow bland "ulcer" diets with between-meal feedings of milk or antacid substances. The use of alcohol and tobacco was forbidden. Patient cooperation in general was good. Sedation was given to patients who, although responding well to Ban-

TABLE 1.—*Results of Banthine Therapy in the Treatment of Disease of the Digestive Tract*

Diagnosis	No. of Cases	Results		
		Good	Fair	Poor
Peptic ulcer				
Duodenal	65	44	7	14
Stomal	7	5	2	....
Gastric	5	3	....	2
Hypertrophic gastritis	7	7	....	....
Functional indigestion	23	1	2	20
Chronic non-specific colitis and regional enteritis	7	....	1	6
Others	11	....	6	5

thine therapy, manifested extraordinary nervous irritability, and to patients who were being confronted with situations felt to be too disturbing to them. There was a tendency among patients who obtained good symptomatic relief on Banthine therapy to become dependent on Banthine for control of pain. In the earlier phases of this study, it was discovered that patients "felt so well" that they liberalized their diets or resumed the use of alcohol and tobacco without the physician's approval. In some of them, complications of ulcer developed as a result. Two patients had bleeding during the period of Banthine therapy, and in two others there was no evidence of healing noted in x-ray studies after six weeks and two months.

Patients who responded favorably to Banthine therapy soon became entirely free of abdominal pain and tenderness on palpation. This complete relief of distress usually occurred after about three weeks of treatment. It was observed that in some cases the original dose of Banthine then could be reduced and the diet liberalized without recurrence. In some instances, it was also possible to reduce the dose of sedative and antacid preparations. However, it was essential to consider each patient individually in readjusting diet and medication.

In the group with good results there were some patients who initially did poorly on Banthine. It was found that some of these patients were not receiving a sufficiently large dose of the drug. Whereas most adult male patients of average weight and height obtained symptomatic relief from the established dose of 100 mg. orally every six hours, some patients required larger amounts and some needed it oftener than every six hours. The dose and time interval were determined by how long the patient remained free of pain after Banthine was given and by the degree of freedom from pain obtained by the amount of Banthine given. Many female patients as well as males of small stature required smaller amounts of Banthine to control symptoms. In several cases, recurrence of distress developed while the patient was receiving Banthine therapy. In general this was controlled by increasing the dose of Banthine.

Fourteen of the patients with "good" response to Banthine therapy either took the drug constantly in small doses after symptoms were relieved or occasionally as a prophylactic measure at times of physical or emotional stress or when other illness developed. All of these patients were known to be susceptible to reactivation of ulcer distress; nine of them had had two or three recurrences annually for several years. None of them had a recurrence of distress while following the prophylatic regimen.

Striking analgesic effect of Banthine was observed in three patients who had severe pain extending into the back, suggestive of posterior penetration. They were relieved promptly by Banthine.

Most of the "poor" responses to Banthine therapy were not the result of failure of the drug to relieve symptoms of ulcer. In several cases Banthine had to be discontinued because of troublesome side effects (Table 2). Pronounced urinary retention developed in male patients in the older age group. Several of the patients in this group had, in addition to ulcer symptoms, other complaints of a functional nature. These were aggravated when Banthine was given, probably because of emotional instability. One instance of failure of Banthine therapy illustrates well the need for careful adjustment of the dosage of the drug. The patient was a 38-year-old woman who weighed 95 pounds. Several days after a major pelvic operation and while the patient was still in the hospital, a recurrence of ulcer distress developed. Banthine was given, 100 mg. every six hours. After 36 hours of Banthine therapy, pronounced abdominal distention, nausea, and vomiting developed and peristaltic sounds were absent. Ileus subsided when Banthine therapy was discontinued and intestinal intubation was carried out for a 24-hour period. In no case was Banthine therapy employed in patients with clinical evidence of pyloric obstruction, as it was felt that the hypomotility produced by Banthine would only aggravate the condition.

Table 2.—*Complications During Banthine Therapy*

Complication	Number
Peptic Ulcer Series	
Hemorrhage	1
Urinary retention	3
Ileus	1
Central effect (excitement, depression)	6
Psychalgias (vague pains)	1
Excessive dry mouth	3
Non-Ulcer Series	
Distention, gas	10
Symptoms aggravated	17
Central effect	2
Ileus	2
Excessive dry mouth	2

Chronic hypertrophic gastritis resembles peptic ulcer in a number of the clinical aspects. It is a functional disturbance of gastric secretion and motility, the cause of which is not known. However, it may be aggravated by emotional stress, dietary indiscretions or systemic infection. The diagnosis of this disturbance is based on gastroscopic observation. Banthine therapy often relieves the distress of this form of gastritis, but in the few cases in which gastroscopic examinations were carried out during the course of treatment little or no change in the state of the gastric mucosa was noted. It is important in treating patients with this disease to restrict the diet and the use of alcohol and tobacco. Sedation is employed wherever indicated.

Functional Indigestion and Spastic Colon

Patients with functional indigestion and spastic colon are for the most part far more unstable emotionally than are patients with ulcer. They are in general hypochondriacal, anxious, and fearful of cancer. Many have consulted innumerable physicians and received countless therapeutic regimens without relief. It was therefore not surprising to observe the uniformly poor response of such patients

to Banthine therapy. In nearly every case the symptoms were aggravated when Banthine was given; the patients had more gas, more nausea or more of whatever they complained of. It is felt that the poor response reflected the patients' interpretation of the diminution of gastrointestinal tract motility produced by Banthine.

Chronic Non-Specific Ulcerative Colitis and Regional Enteritis

In patients with chronic ulcerative colitis or regional enteritis, Banthine uniformly produced a striking degree of intestinal hypomotility, resulting in several instances in abdominal distention of a marked degree with diminution or even absence of peristaltic sounds. In all but one patient these reactions were so pronounced that Banthine therapy was discontinued. The patient who continued to receive the drug had mild ulcerative colitis limited to the sigmoid, and Banthine reduced the frequency of defecation and relieved the pain of the disease. In this group of patients reduction of the dose of Banthine in an effort to avoid production of ileus resulted in no apparent effect on bowel motility. The results of Banthine therapy in the small group of patients with these disorders as well as in spastic colon were similar in general to those reported by Kern and co-workers.[5]

Other Diseases

In the group of patients with "other diseases" of the gastrointestinal tract (Table 1) there were not enough with any one disease to permit drawing conclusions. However, the results of Banthine therapy in hiatal hernia suggest the drug may be of value in the treatment of this condition. One of the patients with hiatal hernia, who had not been satisfactorily relieved by other therapeutic regimens, began taking 50 mg. of Banthine with every meal when the drug first became available and was completely asymptomatic at the time of this report.

DISCUSSION

Although there is ample experimental evidence that Banthine will reduce motility throughout the gastrointestinal tract, the present study as well as previously published reports[4, 5, 6] indicates that, clinically, Banthine has its greatest application in diseases of the stomach and duodenum. Here, if used in conjunction with proper diet and at times sedatives and antacid preparations, it seems to be far more effective than any other anticholinergic preparation.

To date there is no complete explanation for the failure of Banthine to suppress small intestinal and colonic hypermotility more consistently. Kern and co-workers[5] noted that the drug will antagonize experimentally produced bowel hypermotility in the laboratory, but it will not control the hypermotility of emotional stress to the same degree. This would explain, at least in part, the failures of Banthine therapy that have been reported.

Certain conditions not only do not respond to Banthine therapy but may be aggravated by it. It is not unlikely that the Banthine-produced limitation of propulsive power proximal to a segment of bowel narrowed by the inflammatory process of regional enteritis or ulcerative colitis accounts for the ileus observed.

It is interesting to speculate on the reasons that Banthine therapy fails so completely in patients with functional indigestion and in emotionally unstable patients with peptic ulcer. In addition to the factors cited by Kern,[5] as was indicated in an earlier paragraph these patients are extremely introspective and overly aware of bowel activity. This is considered a major factor in the failures noted. The author pointed out in a previous report[2] that it may well be that Banthine, like certain other drugs (barbiturates, morphine, alcohol) is poorly tolerated by emotionally unstable persons. Certainly many patients who fit this description are intolerant of other medical regimens. Winklestein[8] raised the question that some sympathetic factor might contribute to some of these failures.

The matter of side reactions to Banthine therapy (Table 2) requires some consideration. The outstanding contraindication to Banthine therapy is benign prostatic hypertrophy, although some patients with enlarged prostate glands have been able to tolerate the drug if it is employed in gradually increasing doses. Theoretically glaucoma should be aggravated by Banthine therapy. To date no known instance of this has occurred. The one occurrence of paralytic ileus in a patient who received large doses of Banthine postoperatively points out the need for caution in Banthine therapy in this situation as well as the need for carefully adjusting the dosage of the drug to the weight of the patient. There has been no evidence that Banthine has any harmful cardiovascular effects. The more common side effects of dry mouth, blurred vision and urinary slowing usually subsided spontaneously after 48 to 72 hours of treatment.

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REFERENCES

1. Asher, L. M.: Unpublished data.

2. Asher, L. M. and Cohen, S.: The effect of Banthine on the central nervous system, Gastroenterology, 17:178, Feb. 1951.

3. Benjamin, F. B., Rosiere, C. E. and Grossman, M. I.: A comparison of the effectiveness of Banthine and atropine in depressing gastric acid secretion in man and the dog, Gastroenterology, 15:727, Aug. 1950.

4. Grimson, K. S., Lyons, C. K. and Reeves, R. J.: Clinical trial of Banthine in 100 patients with peptic ulcer, J.A.M.A., 143:873, July 8, 1950.

5. Kern, F., Almy, T. P. and Stolk, N. J.: An experimental and preliminary clinical study of the effect of a new quaternary amine, Banthine, upon the human colon, Gastroenterology, 17:198, Feb. 1951.

6. Longino, F. H., Grimson, K. S., Chittum, J. R. and Metcalf, B. H.: An orally effective quaternary amine, Banthine, capable of reducing gastric motility and secretions, Gastroenterology, 14:301, Feb. 1950.

7. Smith, C. A., Woodward, E. R., Janes, C. W. and Dragstedt, L. R.: The effect of Banthine on gastric secretion in man and experimental animals, Gastroenterology, 15:718, Aug. 1950.

8. Winklestein, A.: Banthine in the therapy of peptic ulcer, Correspondence, J.A.M.A., 144:1501, Dec. 23, 1950.

Treatment of Genito-Urinary Tuberculosis With Streptomycin and Synergistic Drugs

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SUMMARY

The use of newer drugs in the treatment of genito-urinary tuberculosis is usually auxiliary to accepted surgical and medical procedures. The treatment of choice is removal of the tuberculous focus by surgical methods whenever this can be achieved. Risk of tuberculous complications of surgical operation may be greatly reduced by the use of these drugs. There is also a significant place for such treatment when disease is too far advanced to permit surgical removal. Under these conditions, the principal result is one of palliation only in many circumstances. The drugs of choice at this time are a combination of streptomycin and para-aminosalicylic acid (PAS) and the treatment is frequently more prolonged than in the case of tuberculosis of other organs.

THE most significant recent practical developments in the field of antibacterial therapy of tuberculosis include: (1) The demonstration that para-aminosalicylic acid (PAS) is an effective and useful auxiliary remedy, and the widespread availability of this drug in a variety of acceptable formulations, (2) the repeated confirmation of the superior therapeutic value of streptomycin when combined with PAS, especially in delaying the development of bacilli which are resistant to either drug, (3) the apparent continued effectiveness of combination therapy for periods of time far in excess of that realized when streptomycin was used alone, (4) the possibility that streptomycin may at times retain some degree of beneficial action even after the tubercle bacilli appear to have become resistant to the drug as judged by laboratory tests, (5) the perfection of methods for parenteral administration of PAS in doses far in excess of those tolerated by the oral route, and with correspondingly enhanced therapeutic efficacy. All of these developments are of paramount significance in a disease so stubborn, so protracted, and so likely to recur as is tuberculosis of the genito-urinary tract.

For less than critical tuberculous infection, a therapeutic regimen employing PAS in doses of 12.0 gm. per day by mouth, combined with 1.0 gm. of streptomycin or dihydrostreptomycin injected intramuscularly two or three times per week, appears to be adequate to keep the disease process in check. The practical advantages of such a regimen, especially with regard to patients who are not confined to a hospital, is instantly obvious. Such a therapeutic program may be persisted in for long periods, often for many months, before the predominant bacteria appear to have become resistant either to streptomycin or to PAS. While no large series of patients with tuberculosis of the genito-urinary tract has been subjected to such therapy, the author has observed results in a sufficient number of cases to be convinced of genuine therapeutic accomplishments by this means. It is believed, however, that in certain acute and critical, rapidly progressive types of tuberculous infection, daily administration of streptomycin or dihydrostreptomycin may be necessary.

It is doubtful if there is any circumstance in which streptomycin should be employed without PAS in the treatment of tuberculosis, except when persisting severe allergic reaction to PAS makes administration of that drug impossible. The troublesome gastrointestinal irritation produced by PAS usually can be controlled by regulation of the dosage or by shifting to a different formulation, usually some form of the sodium salt combined into tablets or into coated and flavored granules. Fortunately drug tolerance often improves slowly and much depends upon the patient's zeal and fortitude and upon the physician's insistent encouragement and determination.

The protracted discussion concerning the relative toxicity of streptomycin and dihydrostreptomycin loses practical significance when the interrupted combined treatment regimen described earlier in this presentation is employed. When either drug is injected but twice or three times a week, toxic properties are rarely manifested. There is increasing evidence that daily streptomycin administration will produce vestibular damage of mild degree in a small but significant percentage of patients treated for many months. Also there are increasing numbers of reports of delayed damage to the auditory nerve when dihydrostreptomycin is employed in large doses for very long periods. These reports vary so widely that suspicion is growing that not all products labelled as dihydrostreptomycin were identical products, especially during the early months of the development of this drug. There is no convincing evidence that either streptomycin or dihydrostreptomycin possesses any superior therapeutic potency when the two are compared.

Antibacterial drugs other than the streptomycin drugs and PAS have not become established as suitable for the treatment of genito-urinary tract tuber-

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culosis. Derivatives of diaminodiphenylsulfone, of chaulmoogra oil, and of the thiosemicarbazone radical have been suggested but have not appeared to be equal to the PAS-streptomycin combination in treatment of this condition. Viomycin is being studied extensively at present but its present form offers certain disadvantages which make it appear to be an improbable successful contender in competition with PAS and streptomycin. However, it cannot be judged critically upon the meagre data available.

In nearly all instances those forms of genito-urinary tract tuberculosis which, before the advent of streptomycin and PAS, were regarded as necessitating surgical treatment are still so regarded. Furthermore, antibacterial therapy has strengthened the surgeon's approach to many forms of tuberculosis, has widened the range of application of surgical treatment, and has been at least of great palliative value in many circumstances in which, formerly, surgical treatment might have been regarded as a failure.

The availability of additional dynamic therapeutic procedures has made the diagnosis of genito-urinary tract tuberculosis of greater importance and has sharpened interest in the organs of the genito-urinary tract among physicians who care for tuberculous patients. Precise diagnosis and evaluation, such as can only be realized through thorough study by skilled urologists, has become essential whenever the tuberculous patient has urologic symptoms or whenever significant pyuria or microscopic hematuria is noted in routine urinalysis.

Destructive lesions of long-standing tuberculous infection frequently necessitate surgical extirpation when they are so localized as to be subject to removal at reasonable risk, and similar general rules apply whether the seat of the disease be in a lung or in a kidney. Mucous membrane implants, whether in the bladder, the larynx or the intestine, frequently respond most dramatically to adequate antibacterial therapy with relief of the distressing symptoms caused by such superficial lesions of sensitive mucosal surfaces. In the case of tuberculous cystitis the therapeutic objective frequently is palliation and the prevention or retardation of development of the contracted, low capacity, fibrotic bladder. This may be achieved frequently even when smouldering renal tuberculosis remains, and fortunately such renal infection may at times be compatible with many years of comfortable and productive life.

No discussion of genito-urinary tract tuberculosis is complete which does not stress the metastatic character of the disease and which does not urge the physician and the surgeon to search repeatedly for other foci of tuberculosis, and to employ all hygienic measures which may avoid further dissemination of the disease. Few patients with renal tuberculosis die of renal insufficiency; more commonly the fatal episode is due to tuberculosis elsewhere. Skeletal tuberculosis is peculiarly inclined to develop in association with renal tuberculosis.

The antibacterial drugs were recognized at once as offering real hope to patients with tuberculosis of the genito-urinary tract, but experience eventually produced many disappointments. These failures were usually attributable to the too brief period of effective action of streptomycin, because of the development of resistant bacilli, in so protracted a disease. With newer auxiliary drugs for treatment of streptomycin-resistant strains of bacilli, and with newer regimens of combined therapy which prolong the period of effective antibacterial activity, the future appears brighter than at any previous time.

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Correlation of Genito-Urinary and General Tuberculosis

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SUMMARY

Genito-urinary tuberculosis is considered to be a local manifestation of a generalized tuberculous infection which, for all practical purposes, has gained entrance to the body through the respiratory tract. Even though clinical or roentgenographic evidence of the pulmonary infection is found in only a small percentage of cases, the problem must be attacked as a whole.

Indolent or inactive disease in other parts of the body may become reactivated as the result of surgical intervention or severe complicating infection.

The importance of thorough general antituberculosis treatment in every case cannot be overemphasized.

As tuberculosis is a generalized infection with focal manifestations most often in the lungs but not infrequently elsewhere in the body, evaluation of the problem of tuberculous lesions in the genito-urinary tract by physicians primarily interested in the medical aspects of pulmonary tuberculosis is quite in order. Directing treatment entirely at lesions at one site while ignoring the possibility of tuberculosis elsewhere may reduce a patient's chance of satisfactory recovery.

The reported incidence (Table 1) of genito-urinary tuberculosis depends upon whether the patients observed had active pulmonary tuberculosis, active extrapulmonary tuberculosis, or inactive or unapparent pulmonary tuberculosis. Statistics vary also according to the nature of the material studied —whether it is clinical or pathological, whether it is from general hospitals or from tuberculosis institutions. Much depends, too, upon how completely interested and efficient are the clinicians in searching for the presence of complications which may be symptomatically of minor significance.

MacLean[8] reported an incidence of 1 to 2 per cent observed in routine autopsies and of 5 per cent in cases in which there was active pulmonary tuberculosis. He cited reports noting up to 70 per cent incidence of genito-urinary lesions in cases in which there was active extrapulmonary tuberculosis. Bell[3] stated that "tuberculosis of the kidneys is one of the common diseases coming to the attention of urologists but is an infrequent cause of death." He noted renal tuberculosis, exclusive of the miliary form, in 0.22 per cent of autopsies; the incidence of all forms of tuberculosis in persons over one year of age in his material was 8.4 per cent. Miliary renal tuberculosis is observed very frequently at autopsy in cases in which death was caused by pulmonary tuberculosis; incidence of from 20 to 45 per cent has been reported by various observers. Ulcerative renal tuberculosis—that for which surgical treatment may be indicated—is a much less frequent complication; it has been observed at autopsy in from 3.5 to 7 per cent of cases in which the subjects died of pulmonary tuberculosis. In a study of the 1,168,000 patients who were discharged from or died at the Los Angeles County General Hospital between 1918 and 1948, Bogen and Butt[4] noted that in 743 cases (0.06 per cent) death was attributed to genito-urinary tuberculosis. Of some 50,000 patients with active pulmonary tuberculosis, 1.9 per cent had renal tuberculosis at the time of discharge from or death in the hospital; renal tuberculosis was the cause of death in 348 cases (0.7 per cent). In 6,000 of the 40,000 autopsies performed in the 30-year period, evidence of pulmonary and/or extrapulmonary tuberculosis was noted, and renal tuberculous lesions were observed macroscopically in 644 subjects—10.6 per cent of those in which tuberculosis was present. Macroscopic tuberculous lesions of the urinary tract were noted in 20 per cent of cases in which death was attributed to pulmonary tuberculosis. Tuberculosis of the urinary tract was observed in only 4.9 per cent of cases in which pulmonary tuberculosis was present but the patient had died of something else. There were only six cases in which tuberculous lesions were observed only in the genito-urinary tract.

Medlar,[10] in an analysis of postmortem examination of 5,424 male subjects over 16 years of age, at Bellevue Hospital from 1935 through 1944, noted that tuberculous lesions in the genito-urinary system were present in 3.1 per cent of the total number, in 4.5 per cent of the cases in which unhealed pulmonary tuberculous lesions were present but death was from other causes, and in 26 per cent of cases in which pulmonary tuberculosis was the cause of death.

Davenport and Greenleaf,[6] reviewing autopsy reports from Fitzsimons General Army Hospital on 500 consecutive cases in which pulmonary tuberculosis was the primary cause of death, noted that there was also renal involvement in 29.2 per cent of the subjects and genital involvement in 15 per cent. As the average age of patients at Fitzsimons is relatively low, the data might be indicative that the incidence of tuberculous infection of the genito-urinary tract in the younger age groups is higher than it is generally believed to be. Bell,[3] reporting on autopsy in

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TABLE 1.—*Reported Incidence of Genito-Urinary Tuberculosis Observed at Autopsy.*

	Incidence Per Cent Reported by					
	MACLEAN	MCKENNA	DAVENPORT	BOGEN	BELL	MEDLAR
In routine autopsy	2.0	.....	.....	1.6	0.22	3.1
In subjects with active pulmonary tuberculosis at death	5.0	5.0	.....	5.0	3.5	4.5
When death was caused by pulmonary tuberculosis	10.0	.....	44.0	20.0	.....	26.0
In subjects with active extrapulmonary tuberculosis at death	.....	30-70	.....	.....	.....	.....

133 cases of clinical renal tuberculosis, stated that in 21 instances there was no evidence of pulmonary disease, in 38 there were inactive or healed pulmonary lesions, and in 74 (56 per cent) active pulmonary disease was present. Bell also cited a number of reports by other investigators who, at autopsy, had noted active pulmonary tuberculous lesions in from 30 to 35 per cent of subjects with renal tuberculosis.

In the past the incidence of renal tuberculosis in children has been much lower than in adults because they so often have acute miliary infection with a mortality rate of some 80 per cent in the first two years of life. In the past five years, however, since the advent of streptomycin therapy, the mortality rate has been greatly reduced; and it may be that with the higher survival rate will come an increase in incidence of extrapulmonary tuberculosis in children. Pollock[11] noted renal tuberculosis at autopsy in 1.5 per cent of cases of patients who died on the pediatric tuberculosis service at Sea View Hospital, but in only four of 2,500 subjects examined postmortem on the general pediatric service. On the latter service, however, renal tuberculosis of the kind that is amenable to surgical treatment was proved in five of 312 cases in which the patients had chronic pyuria.

Infection with bovine tubercle bacilli, once the commonest infective organism, now rarely occurs in this country. This is attributed directly to the enforced routine tuberculin skin testing of cattle and the destruction of infected animals.

There are two main portals by which tubercle bacilli enter the body—the digestive tract and the respiratory tract. Tubercle bacilli usually focalize in the lungs and in tracheobronchial lymph nodes, regardless of the portal of entry; whether the respiratory or the digestive tract is the more common portal is still debatable. Less commonly, the bacilli enter through the eye, through an abrasion of the skin, or, in females, through the genital tract.

As Auerbach,[1,2] Thomas[13] and others have brought out, the most generally accepted postulation is that infection of the kidney is hematogenous, because multiple bilateral seeding is commonly observed, because healed foci often are present, and because of the initiation of ulcerative renal tuberculosis by focal rupture into a calyx or collecting tubule. These investigators have cited voluminous evidence to refute the possibility or to establish the extreme rarity of renal infection by way of primary infection from the anterior urethra, direct extension from a neighboring tuberculous process, lymphatic extension from a neighboring lymph node, or ascending infection from the genital organs.

Metastatic infection from pulmonary lesions to distant organs occurs after tubercle bacilli enter the blood stream, which may come about either by direct erosion of a tuberculous focus into a blood vessel, or by way of the lymph stream which may carry bacilli by way of the thoracic duct into the subclavian vein. Bacterial emboli may lodge in the smallest blood vessels in various organs and tissues but clinically manifest lesions do not always develop at the site. It is believed that the factors governing the chance of development of an active lesion are the number and the virulence of bacilli present, the site of the implantation, the presence or absence of local injury or other infection, and the individual's general resistance against tuberculosis. Resistance against such an invasion and attempts at healing may be manifest in any organ, but in some portions of the body these factors are less cogent than in others.

PHASES OF TUBERCULOUS MANIFESTATIONS

The various phases of the manifestations of tubercle bacilli in the human body have many times been likened to those of syphilis. The cycle of events may be described under four headings, dating from the time of invasion by the tubercle bacilli to the most advanced lesions of visceral caseocavernous tuberculosis.

1. The period of incubation — a latent period from the time of original implantation of tubercle bacilli to the appearance of a positive reaction to a skin test with tuberculin.

2. The period of invasion—the time in which the organisms reach the lymphoid system. This is generally a silent phase as far as clinical manifestations are concerned.

3. The period of visceral spread — the time in which, lymphoid resistance having been overcome, implantations of tubercle bacilli reach the various organs by way of the blood stream. The nature of the lesions produced in the tissues by tubercle bacilli depends upon the factors previously enumerated (number and virulence of the organisms, local and general tissue resistance, etc.). The lesions may be sparse or miliary, active or relatively quiescent. Should the original infection be massive, the second phase follows a rapid course and the metastatic foci may become fulminant and rapidly fatal. Should the period of invasion be resisted by the lymphoid sys-

tem, leakage of bacilli into the blood stream will be sparse and infrequent and the metastatic foci rare and slow to develop.

4. The period of advanced caseocavernous tuberculosis. This is the stage of active pulmonary tuberculosis (phthisis) characterized by extensive caseous or ulcerative lesions in the lungs.

As to renal tuberculosis, it would appear that the implantations of tubercle bacilli reach the kidney at a stage in the disease long before the fourth period in which there are gross lesions in the lungs. It is probably in the third stage of tuberculosis, the period of general infection when tubercle bacilli are escaping from the lymphatic system to the blood stream, that the earliest minute foci appear in the kidney. It is in this stage, after lymphatic resistance has been overcome and intermittent hematogenous dissemination of tubercle bacilli is taking place, that implantations occur in the renal cortex which give rise to tubercle bacilluria. As a rule, persons in whom this phenomenon occurs have very nearly, but not quite, overcome the tuberculous infection in its second stage of systemic invasion.

Pathologists, spearheaded by the meticulous work of Medlar over the past 30 years, have traced exactly what occurs when the body is invaded by tubercle bacilli. Save for variations caused by differences in histologic and anatomic structure, tuberculous lesions in the kidney do not differ from those in other organs and tissues of the body. As far as can be determined, the cells that participate in the defensive and reparative processes as regards tuberculous lesions are of the same type in all tissues and organs. The end product of the reparative process is a scar with no indication of the causative factor.

It is not uncommon for a great variety of tuberculous lesions to be present in a single kidney. Mononuclear tubercles, tuberculous abscesses, areas of caseation, scarred areas infiltrated with lymphocytes and with one to many giant cells present, and scars devoid of lymphocytic or mononuclear leukocytic infiltration have all been observed in one organ. From this it would appear that the patient had had, at intervals, showers of tubercle bacilli in the blood stream, and that these showers had been followed by the development of tuberculous lesions in the kidney. The pathologic processes observed in such organs represent, then, lesions of different age and severity, and the scars represent the healed stage in an area where the tubercle bacilli have been overcome. In light of these observations plus the fact that tubercle bacilluria is noted in about 10 per cent of the cases reported without clinical manifestations of renal involvement, it must be agreed that renal tuberculosis with bacilluria can exist without causing symptoms. Rosencrantz and Charnock,[12] in an investigation of 200 men with active pulmonary tuberculosis but with no complaints referable to the genito-urinary tract, noted that there were tubercle bacilli in the urine of 7 per cent of the patients, and that 18 per cent had tuberculosis of the genital tract without bacilluria. It is believed that bacilluria does not exist without ulcerative lesions in the kidney. These lesions are often microscopic and are frequently overlooked. On the other hand, it would seem that renal tuberculosis can exist without bacilluria, judging from the absence of inflammatory exudate and bacilli in the lumen of the tubules in many cases.

Medlar's conception of the pathogenesis of genito-urinary tuberculosis may be at variance with some clinical concepts, but his views must be respected inasmuch as they are based on extremely thorough pathological studies in which the existence of tuberculous disease without significant clinical symptoms was observed. It has been noted that microscopic tuberculous lesions can ulcerate into renal tubules, discharge bacilli into the urine, and then heal completely. Medlar expressed the belief that it is possible for the prostate gland to become infected at the time the urine is contaminated, which could account for the finding, at necropsy, of tuberculosis in the prostate gland of subjects with macroscopically normal kidneys. He said that it could not be assumed that renal lesions never had existed even though the only tuberculous lesions observed were in the genital organs. In Medlar's autopsy series, renal lesions were observed in twice as many subjects as were prostate lesions, and in three times as many as were lesions in other genital organs. Of the renal lesions, 64 per cent were miliary; and involvement of the genital organs in association with miliary renal disease was infrequent. Combined renal and genital tuberculosis was five times more common in subjects with necrotic foci than in those with miliary lesions. These observations suggest that in at least a high proportion of cases in which prostatic involvement occurs, it follows the development of renal lesions. The data also indicate that the prostate gland is the most often affected of the organs in the genital system.

INFECTION OF OTHER GENITAL ORGANS

Although there is general agreement that tuberculosis of the kidney is metastatic and blood-borne, there is no such agreement relative to tuberculous infection of the organs of the genital system, and especially with reference to the relationship of infection in one organ to infection of other organs of the system. Barney[7] expressed the belief that infection is blood-borne to the epididymis, and from there spreads by lymphatic channels to the seminal vesicles and the prostate gland. Young[7] took the view that the first focus in the genital system is in a seminal vesicle, whence the disease spreads to the prostate gland, and then, by lymphatic extension, to the epididymis. Borthwick[5] strongly supported Young's theory of central infection and centrifugal spread, although he took the view, as do many other investigators now, that infection is by bacilluria, reaching the prostate primarily, and that downward spread along the vas to the epididymis is via the lumen and not by lymphatic channels. In support of this view, Borthwick noted that in a very high proportion of all cases of tuberculosis of the genital tract tubercle bacilluria was present at some stage. Also he noted

palpable evidence of prostatic or vesicular involvement in 83 per cent of 237 cases of tuberculous epididymitis, an observation that appears to accord with Medlar's[10] report that in subjects in which tuberculous epididymal lesions were of macroscopic proportions, more than one—and frequently all—of the genital organs were tuberculous. A comparison of the incidence of epididymal tuberculosis with that of tuberculosis of the fallopian tube (recalling that the urinary and genital systems of the female are separated completely) suggests strongly that epididymal tuberculosis is related much more closely to the disease in other organs of the genito-urinary system than to a direct implantation from the blood stream: Tuberculosis of the fallopian tube occurs about as frequently in association with miliary as with necrotic renal lesions, whereas the incidence of epididymal tuberculosis is eight times greater in persons with necrotic or excavating renal lesions than it is in persons in whom the renal disease is miliary.

In the management of patients who have genito-urinary tuberculosis, it must be borne in mind that renal tuberculosis must be related to a primary focus of living bacilli elsewhere in the body. The primary lesion may have occurred in childhood or adolescence. As renal tuberculosis is the result of hematogenous dissemination of tubercle bacilli to the viscera, complete and systematic clinical, laboratory and radiological examinations must be carried out. The presence of extra-urogenital foci of tuberculous infection is particularly likely. If such foci are active, surgical intervention may increase the activity. If they are quiescent, they may remain so during surgical intervention or they may become reactivated, depending upon the virulence of the organisms and the powers of resistance of the patient. Surgeons and physicians managing the conservative treatment must cooperate closely, recognizing the importance of dealing with tuberculosis as a generalized infection. As has so often been emphasized, particularly by urologists who have worked closely with tuberculosis sanatoria, since urologic tuberculosis is chronic and slowly progressive, there rarely is need for rushing into a course of treatment before the condition of the entire genito-urinary tract is determined and attempt is made to locate the primary source of the infection.

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REFERENCES

1. Auerbach, O.: Pathology of renal tuberculosis, International Clinics, 3:21, 1940.

2. Auerbach, O.: Pathogenesis of renal tuberculosis, Quart. Bull. Sea View Hospital, 7:122, Oct. 1941.

3. Bell, E. T.: Renal Diseases, Lea & Febiger, 1950, sixth edition.

4. Bogen, E., and Butt, E.: Personal communication. To be published Amer. Rev. of Tuberculosis.

5. Borthwick, W. M.: Modern concepts of genital tuberculosis, Edin. Med. Jour., 53:71, 1946.

6. Davenport, M. C., and Greenleaf, H. M.: Study of 500 autopsies in cases of tuberculosis, U. S. Armed Forces Med. Jour., 2:70, Jan. 1951.

7. Lee, R. O.: Modern views on pathogenesis and treatment of tuberculosis in the male genital tract, Med. Press, London, Nov. 1, 1950, 415.

8. MacLean, J. T.: Genito-urinary tuberculosis, Bull. of Vancouver Med. Assoc., 22:70, Nov. 1945.

9. McKenna, C. M.: Clinical tuberculosis, Goldberg, Vol. 2. F. A. Davis Co., Philadelphia, 1945.

10. Medlar, E. M., Spain, D. M., Holliday, R. W.: Postmortem compared with clinical diagnosis of genito-urinary tuberculosis in male adults, Jour. Urology, 61:1078, June 1949.

11. Pollock, R.: Pediatric genito-urinary tuberculosis, Quart. Bull. Sea View Hosp., 7:126, Oct. 1941.

12. Rosencrantz, E.: Frequency of tubercle bacilluria, Jour. Urology, 44:498, Oct. 1940.

13. Thomas, G. J.: Tuberculosis of the Genito-Urinary System, Fundamentals of Pulmonary Tuberculosis, Thomas, 1949, 385.

14. U. S. Public Health Reports, 65:468, April 17, 1950.

Indications for Surgical Treatment in Genito-Urinary Tuberculosis

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SUMMARY

Proper methods of surgical treatment effect arrest of localized tuberculosis in 90 per cent of cases, but as early and latent renal tuberculosis can be controlled in 50 per cent of cases by conservative treatment, careful deliberation as to choice of method of treatment is necessary in each case. In some circumstances, operation is definitely contraindicated. These observations apply also to tuberculosis elsewhere in the urogenital tract. When surgical treatment is carried out, careful preoperative and postoperative medical care is an important factor.

The primary site of urogenital tuberculosis is the kidney, from which organ the infection spreads to the ureter, the bladder and the prostate gland. The prostate gland is the initial site of invasion in the genital tract, extension to other genital structures following. This sequence of infection is an important consideration in determining the management of urogenital tuberculosis.

SURGICAL therapy for tuberculosis is a medical as well as a surgical problem, the surgeon being one member of the therapeutic team. Tuberculous lesions other than pulmonary are but manifestations of the constitutional disease; the primary lesion is always in the chest. The infection spreads from the lungs through the large lymphatic duct into the subclavian vein, into the general circulation, and thence to various organs and tissues. At times, when drainage becomes obstructed or when medical treatment is ineffective, an infected organ must be excised.

Once tuberculosis has spread from the chest, it is doubtful that it ever is completely eliminated, but it may be controlled; surgical treatment does not cure tuberculosis, but rather aids in obtaining the optimal clinical result. Frequently, surgical treatment can benefit tuberculous patients, provided their specific problems are considered.

General and local resistance against Mycobacterium tuberculosis can develop in the human organism, and an understanding of the mechanism by which it develops is essential to proper management, whether medical or surgical. The success of surgical treatment depends on careful selection of patients, proper timing of the operation, and long postoperative care. The important lesions—those that may cause death—must be attacked first. If there are active lesions in the lungs or elsewhere, operation should be postponed until they are arrested. Postoperative care must be continued until any residual infection or any lesions activated by the surgical manipulation become quiescent.

Renal Tuberculosis

In more than 50 per cent of cases of early and latent renal tuberculosis, arrest of the local lesion can be brought about by conservative treatment. Proper methods of surgical treatment effect ultimate arrest of localized tuberculosis in 90 per cent of cases. Patients recover more quickly if treated medically both before and after operation.

Nondestructive renal tuberculosis, even if unilateral, should not be treated by surgical intervention. Constitutional treatment should be instituted and the local lesion should be carefully observed in order that if a destructive process develops, it will be known immediately.

Unilateral destructive renal tuberculosis is an indication for nephrectomy provided (1) the other kidney is functionally sound and is free of tuberculous infection, (2) active local or general tuberculosis is not present, and (3) the general condition of the patient is such as to enable him to withstand an operative procedure of this magnitude.

In the case of a small destructive lesion of the kidney, the choice of surgical extirpation or watchful waiting frequently is difficult. Such lesions may involve only 1 per cent to 5 per cent of the tissue in an otherwise normal kidney. To sacrifice the entire organ because of a small destructive lesion, especially in view of the high incidence of bilateral renal tuberculosis, seems unjustifiable. If a patient is treated for constitutional tuberculosis, specific therapy for small destructive lesions may be postponed almost indefinitely. Treatment of the constitutional disease must be intensive and the progress of the local lesions must be noted regularly.

Treatment for bilateral renal involvement also requires deliberation. If there is complete renal destruction on one side, if the other kidney has a nondestructive lesion and good function, and if the patient's resistance against tuberculous manifestations elsewhere in the body is satisfactory, then nephrectomy is justifiable, provided surgical treatment is preceded and followed by general hygienic

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measures. If, on the other hand, the lesions are small on both sides, or small on one side and of moderate size on the other, surgical treatment should not be undertaken. The duration of life for patients with bilateral renal tuberculosis is determined to a large extent by the amount of residual well-functioning renal tissue; frequently it is substantial, so that two tuberculous kidneys provide greater reserve and a better prognosis than only one kidney. Constitutional treatment, heliotherapy, and the careful cooperation of the patient may prolong life for several years.

If the lesions in one kidney are progressive and the other kidney is functionally sound, nephrectomy should be done. However, unless there is an accompanying acute ureteral obstruction or hemorrhage, the patient should be treated conservatively until the exact character and extent of the local lesion are determined.

Before nephrectomy is considered[1,2,3] the following criteria should be established: evidence of considerable destruction and cavitation of the kidney; the presence of tubercle bacilli in the urine on repeated examination at intervals of considerable duration; the absence of tubercle bacilli in the urine from the opposite kidney on repeated examination; the failure of medical management of the type now employed in pulmonary tuberculosis—that is, proper sanitarium regimen and the administration of chemotherapeutic and antibiotic agents in suitable dosage.

Tuberculosis of the Ureter

Tuberculosis of the ureter always is secondary to renal tuberculosis. Indications for surgical treatment are similar to those for the kidney.

Tuberculosis of the Bladder

Surgical treatment for vesical tuberculosis consists in light fulguration of nonhealing vesical lesions after removal of the original focus in the kidney, and sometimes in diversion of the urinary stream without removal of the bladder. Antibiotic and chemotherapeutic agents frequently will control the symptoms, or the lesions themselves, so that resort to surgical procedure or even cautery is now less frequent than it was before the introduction of these agents.

Tuberculosis of the Genital Tract

The initial lesion of urogenital tuberculosis is located in the kidneys. Infection spreads to the ureters, the bladder, the prostate gland, the seminal vesicles, the vas deferens and the epididymis, at first by way of the urine. Later, spread of the tuberculous process is by direct extension along the vas from the prostate gland to the epididymis and through the ejaculatory duct to the seminal vesicles.

In the genital tract proper, the prostate gland is the initial site of tuberculous infection. Clinical research and examination of tissues removed at operation and postmortem examinations has convinced the author that prostatic tuberculous infection is derived from infected urine from a tuberculous kidney. From the prostate gland, extension of tuberculous infection is by way of the hollow tubes or ducts, as the lumen of the vas into the epididymis.

Destruction of prostatic tissue may result in excavations and scars sufficient to produce obstruction and interference with urination. Following control of the renal tuberculous lesions, transurethral prostatic resection occasionally is necessary.

Surgical treatment for tuberculosis of the vas and of the epididymis is less frequently employed since the advent of the chemotherapeutic agents and the antibiotics. The author has never found it necessary to excise the seminal vesicles or the entire prostatic gland because of tuberculous infection, and is of the belief that these lesions should be treated conservatively, especially in the presence of active tuberculous lesions in the kidney or the lungs. Even before the antibiotics and chemotherapy were introduced, the author observed cases in which active tuberculous lesions of the vas and the epididymis were arrested by such measures as continuous moist heat and, when necessary, drainage of infected suppurating areas adherent to the skin over the vas or the epididymis by needle puncture or a small incision. In cases in which nephrectomy was necessary, if conservative management was ineffective in retarding local lesions of the vas and the epididymis, surgical removal of these structures was carried out.

Another reason for avoiding surgical treatment for tuberculous infection of the epididymis and the vas is the hazard incurred to the testicular blood supply. A single main artery, with branches to the epididymis, the vas, and the testis constitutes the blood supply to these structures. The pattern of these branches varies so much that, in spite of careful dissection, the testicular branch can inadvertently be cut and tied, resulting in atrophy of the testis. This frequent complication encourages a conservative attitude and the use of the less hazardous medical regimen. Since tuberculous epididymitis is bilateral in 60 to 70 per cent of cases, the risk of complete loss of testicular function is an accompaniment of surgical treatment for tuberculosis of the epididymis.

Only infrequently has the author found it necessary to remove the testis. Occasionally some testicular tissue must be excised, but the testes have considerable resistance to tuberculous infection.

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REFERENCES

1. Medlar, E. M.: Renal tuberculosis, clinical and experimental, Wisconsin M. J., 25:59, 1926.

2. Medlar, E. M., and Sasano, K. T.: Experimental renal tuberculosis, Am. Rev. Tuberculosis, 10:370-391, 1924.

3. Medlar, E. M., and Sasano, K. T.: Cases of renal infection in pulmonary tuberculosis; evidence of healed tuberculous lesions, Am. J. Path., 2:401-414, 1926.

Experiences With ACTH and Cortisone in Selected Dermatoses

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SUMMARY

Fifty patients with various kinds of skin diseases who were not adequately relieved by conventional therapy were treated with ACTH or cortisone given systemically.

Almost all patients with disseminated neurodermatitis had dramatic initial response, but in only about half the cases was improvement maintained when use of the drugs was discontinued.

It appeared that in other skin diseases, such as lupus erythematosus, scleroderma, psoriasis, dermatomyositis and pemphigus, while improvement may be noted for a time, relapse to the original state occurs after the treatment is stopped.

In four cases of chronic discoid lupus erythematosus, although some improvement was observed when steroid therapy was given, the histologic pattern of biopsy material taken from the lesions after treatment still was characteristic of the disease.

ADRENOCORTICOTROPIC hormone (ACTH) and cortisone were used systemically in the treatment of 50 selected patients with skin diseases. In most cases the dermatosis was recalcitrant to conventional therapy.

In the present report, *disseminated neurodermatitis* and *atopic dermatitis* are used as synonymous terms; and by *eczema*, as the term is used here, is meant dyshidrotic or asteatotic pruritic non-specific dermatosis characterized by erythematous papulovesicular eruption.

Of the 50 patients, 22 had atopic dermatitis, four chronic lupus erythematosus, four acrosclerotic scleroderma, eight "drug eruptions," two psoriasis, two pemphigus, two eczema, two pruritus due to systemic disease, one Kaposi's idiopathic multiple hemorrhagic sarcoma, one idiopathic urticaria, one urticaria due to food sensitivity, and one infectious eczematoid dermatitis.

Steroid therapy was not instituted until after sufficient trial of other methods had failed. All patients treated were observed for the initial eosinophil response to adrenal cortical stimulation or to cortisone, and the weight and blood pressure of all patients was recorded daily. If extended treatment was necessary, electrolyte studies were done at regular intervals.

Improvement was graded as slight, moderate, or great, and the grade was determined by the degree of reduction in the objective symptoms in the skin (such as erythema, lichenification, edema and scaling) and of decrease in the subjective symptoms such as burning and itching.

ACTH was given intramuscularly and cortisone intramuscularly and orally in daily divided doses. It was usual to give 100 to 120 mg. of ACTH per day for the first three or four days and then reduce the amount gradually to 40 to 60 mg. per day. The schedule for cortisone usually consisted of 300 mg., 200 mg., and 100 mg. on successive days and then 100 mg. per day until further gradual reduction was decided upon.

Atopic Dermatitis

Of the 22 patients with atopic dermatitis treated with ACTH or cortisone (Table 1), 13 had dramatic improvement, with reduction in the erythema, resolution of the weeping and lessening of the itching within 48 hours (Figure 1). Nine others improved appreciably in four to five days. Therapy was continued after clinical improvement at a maintenance dose with the idea that the longer the itch-scratch reflex was blocked, the longer the healing time and the less likelihood of relapse. At the time of this report 12 of the 22 patients had complete relapse. In seven cases there was continued improvement, but the longest follow-up was only five months. Two patients had initial improvement but did not return for further observation. One patient had partial relapse and at the time of report had remained in that condition for five months.

Drug Eruptions

Eight patients with "drug eruptions" were treated with ACTH or cortisone. Two patients who had eczematous eruption from gold therapy responded promptly to cortisone, and there was no relapse. One patient with blotchy erythema that had developed when Terramycin® was given systemically for infection of the urinary tract was given cortisone orally. The skin lesions cleared up immediately but recurred three times at the same sites. ACTH then was given and the skin cleared and remained clear. One case of exfoliative dermatitis in a man who had been given sulfamerazine for infection of the urinary tract was treated with cortisone by mouth. The dermatitis cleared rapidly and did not recur. Another patient with a morbilliform eruption due to mersalyl had dramatic response to cortisone given

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orally, and the skin remained clear. Three patients with acute urticaria owing to sensitivity to penicillin were treated. In two patients the results were very good, but in one the effect was equivocal.

Miscellaneous Dermatoses

Four patients with chronic discoid lupus erythematosus were treated with cortisone. The longest period of treatment was three and one-half months and the shortest was one month. All four patients previously had had adequate courses of gold and bismuth with no response. Three of the patients had moderate response and one a slight response to cortisone therapy, but in all cases there were relapses to the former state when treatment was discontinued.

Four patients with acrosclerosis received ACTH or cortisone. Three were not relieved. One had moderate improvement with softening and increased mobility of the skin. While the patient was undergoing steroid therapy, however, visceral scleroderma tous changes developed.

Cortisone was used in two cases of pemphigus vulgaris. One of the patients, a 54-year-old man seriously ill with acute fulminating pemphigus, had dramatic response, and six months after therapy still was free of lesions (Figure 2). The other patient had pemphigus foliaceus of several years' duration. There was slight response to cortisone, and immediate relapse when therapy was discontinued. ACTH was tried and the result was equally disappointing.

Two patients with dyshidrotic eczema involving the hands and arms and complicated by overtreatment had no response to adequate trial of steroid therapy. One was given cortisone by mouth for two weeks and the other received ACTH followed by a course of cortisone.

Cortisone was given orally in two cases of severe pruritus associated with systemic disease—Hodgkin's disease in one case and biliary cirrhosis with xanthomatosis in the other—and the pruritus in both cases was relieved but it recurred immediately when the hormone was discontinued or even when the dose was reduced. The skin xanthomata were not

TABLE 1.—*Disseminated Neurodermatitis (Atopic Dermatitis) Treated with ACTH and Cortisone*

	Age and Sex	Duration of Illness	ACTH	Cortisone	Length of Treatment (days)	Total Dose (mg.)	Initial Improvement	Follow-up
1.	14 mo. M	11 months	.....	syst.	7	400	great	Slight relapse followed by improvement. No follow-up.
2.	17 mo. F	14 months	.....	syst.	7	450	great	Great improvement. Followed for three months.
3.	14 yr. F	History of infantile eczema	.....	syst.	14	2000	great	Complete relapse.
4.	18 yr. M	Present attack 2 years. History of infantile eczema	.....	syst.	11	720	great	Complete relapse.
5.	21 yr. F	Recurrent since infancy	.....	syst.	12	1300	great	Complete relapse.
6.	23 yr. F	Recurrent since infancy	.....	syst.	14	1400	great	Great improvement. Followed for four months.
7.	23 yr. M	Present attack 6 months. History of infantile eczema	.....	oral	11	1200	great	Slight relapse followed by great improvement. Followed for two months.
8.	27 yr. F	6 months	.....	oral	28	3300	great	Slight relapse followed by great improvement. Followed for four months.
9.	29 yr. F	Recurrent 1 year	yes	.....	9	720	great	No follow-up. Patient did not return.
10.	30 yr. M	Recurrent since infancy	.....	syst.	12	1300	great	Complete relapse.
11.	30 yr. M	Recurrent since infancy	yes	.....	11	1000	great	Complete relapse.
12.	40 yr. M	Recurrent 15 years	.....	syst.	14	1200	moderate	Complete relapse.
13.	41 yr. M	2 months	yes	.....	11	600	great	Complete relapse.
14.	42 yr. M	2 month	.....	oral	21	3000	great	Slight relapse followed by moderate improvement. Followed for three months.
15.	52 yr. M	Recurrent 6 years	..... yes	syst.	5 5	700 500	moderate great	Complete relapse. .....
16.	54 yr. M	8 months	yes	.....	7	400	moderate	Continued improvement. Followed for two months.
17.	55 yr. F	1 year	yes	..... syst.	25 21	2000 2500	great	Relapse, but not complete. .....
18.	61 yr. M	4 months	yes	.....	9	550	moderate	Great improvement. Followed for five months.
19.	62 yr. M	Recurrent 6 years	yes	.....	14	1240	great	Complete relapse.
20.	64 yr. M	Recurrent 8 years	yes	.....	30	2025	great	Complete relapse.
21.	66 yr. M	Recurrent 4 years	yes	.....	9	575	great	Complete relapse.
22.	80 yr. M	6 months	.....	oral	7	900	great	Complete relapse.

affected and the depth of jaundice remained about the same.

One patient with generalized psoriasis without arthritis was given cortisone by mouth for one month with no improvement. Another, who had severe rheumatoid arthritis and psoriasis, had no cutaneous improvement after three months of cortisone therapy (100 mg. daily), but subsequently a course of ACTH was given and in two weeks of therapy improvement occurred in more than half of the lesions. A nine-year-old girl with sensitization dermatitis and secondary infection, involving the face, neck and extremities, that had developed after a plastic operation on the face, was given cortisone, and within 48 hours the lesions were almost cleared (Figure 3). Treatment was given for one week, and there was no relapse after three months.

One patient with chronic idiopathic urticaria, possibly psychogenic, became worse while ACTH therapy was being carried out, while another patient with the disease, which might have been caused by allergic sensitivity to a food, had immediate clearing and no recurrence.

In a case of Kaposi's multiple idiopathic hemorrhagic sarcoma, no improvement was noted after ten days of therapy with cortisone, and new lesions continued to develop.

DISCUSSION

It is interesting to consider the rationale for the use of ACTH and cortisone in certain dermatoses. Adrenocorticotropin used systemically and adrenal cortical extract and cortisone applied locally have effects on the skin of rats.[1, 12, 13] After prolonged treatment these effects consist of a thinning of the epidermis both in number of cells and in cell area in the prickle layer, reduction of collagen bundles with increased compactness of collagen, reduction in size of sebaceous glands and hair follicles, and blanching of the skin. These observations are not necessarily applicable to human skin, but if they were it would seem reasonable to use the drugs either locally or systemically for treatment of any skin diseases associated with hyperkeratosis, increased dermal fibrosis and seborrhea. Unfortunately, prolonged systemic use of ACTH and cortisone produces acne and hirsutism,[9] thereby encouraging the seborrheic state.

Both hormones are said to inhibit the formation of granulation tissue,[7] but healing of this type does not take place in dermatitis and superficial dermatoses. Recent reports suggest that burns[2] heal more rapidly when ACTH or cortisone is given and that skin grafts may have a higher percentage of "takes" when these drugs are used.[22]

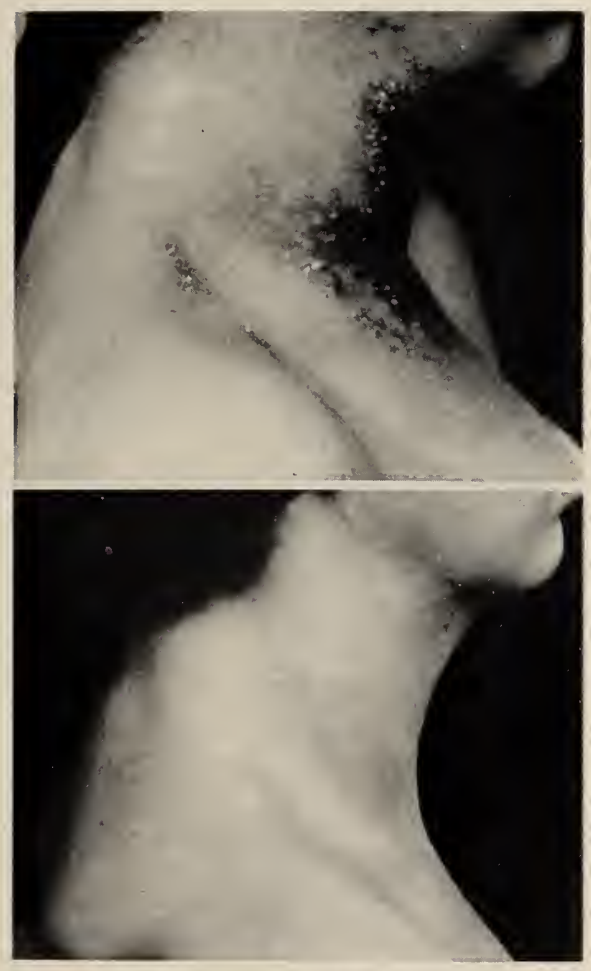

Figure 1.—Severe atopic dermatitis, before and six days after treatment with cortisone.

Figure 2.—Pemphigus vulgaris, before and one month after treatment with cortisone.

Experimentally ACTH and cortisone have been found to inhibit the anaphylactoid reaction[8] and the production of the Arthus phenomenon,[4] possibly by the prevention of the formation of antibodies. Also, ACTH and cortisone have been used successfully in treatment of a variety of allergic disorders.[6, 10] Use of the hormones in treating atopic dermatitis, infantile eczema and allergic drug eruptions, as well as the numerous types of sensitization dermatosis, would thus seem reasonable.

Both ACTH and cortisone usually cause pronounced euphoria and psychological uplifts. This effect must be considered when reviewing the results of therapy in dermatoses that are aggravated or caused by emotional disturbances. The euphoric effect of the steroids may be important in the relief of itching. However, these hormones may have a direct antipruritic effect. It is in treating pruritic dermatoses that these hormones appear to be of the greatest value. It must be kept in mind that a transitory depression may occur after use of the drugs is discontinued.

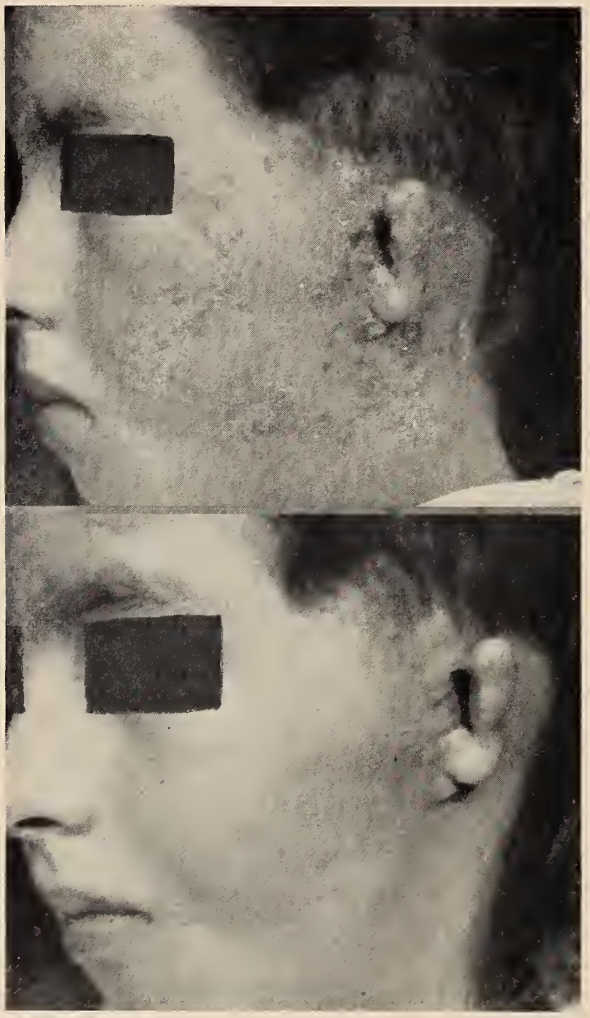

Figure 3.—Infectious eczematoid dermatitis, before and four days after treatment with cortisone.

COMMENT

The results of therapy with ACTH and cortisone in skin diseases have not measured up to the hopes for them. The drugs have been sufficiently studied to permit the conclusion that the disease process is seldom if ever reversed. The symptoms and external evidence of the disease become obscured only to reappear when the drugs are discontinued. The fact that a small number of patients with atopic dermatitis have relapse when steroid treatment is discontinued, and then recover, may be due to the fact that while ACTH or cortisone is being given the anterior pituitary and the adrenal cortex become temporarily inhibited. Then, when the exogenous hormones are cut off, there is a temporary delay in the endogenous production of ACTH and glucocorticoid hormones[9] with the result that the itching and skin eruptions reappear until the anterior pituitary or adrenal cortex starts secreting normally again. Therefore, the period immediately following discontinuance of hormonal therapy may be a critical one, for it may be decided then whether or not there will be complete relapse.

In biopsy of material taken from patients in the four cases of chronic discoid lupus erythematosus in the present series, pathologic changes characteristic of the disease were noted following treatment. In the cases of atopic dermatitis, striking histologic resolution was noted following therapy (Figure 4).

Severe complications occasionally occur with the use of these hormones. They are edema, hypochloremic hypokalemic alkalosis, hypertension, hyperglycemia, acne, hirsutism, striae atrophicae, keratosis pilaris, amenorrhea, the "moon face" and fat distribution associated with Cushing's disease, osteoporosis, and psychic changes.[8, 11] Although these are reversible changes and the more serious ones occur only after prolonged treatment, they indicate the need for caution in deciding to use these drugs for dermatitis which can be treated successfully by other methods. However, in such critical conditions as pemphigus vulgaris, ACTH and cortisone may be the only effective therapeutic agents available. Because of certain complications which occurred during treatment of one patient with atopic dermatitis, the following case is reported.

CASE REPORT

A white American housewife, 55 years of age, was admitted to hospital with complaint of extensive itching eruption of nine months' duration. Conservative therapy had not been effective. A diagnosis of atopic dermatitis was made. ACTH was given and within three days the skin was almost clear. Crusting impetigo of the face caused by coagulase-positive staphylococci and hemolytic streptococci, both sensitive to aureomycin and chloramphenicol, then developed. When the impetigo did not abate after four days of antibiotic therapy—aureomycin locally and chloramphenicol by mouth—ACTH was discontinued and the lesions cleared in the next 24 hours. Then, however, there was a slight relapse in the neurodermatitis. ACTH therapy was resumed and rapid improvement again was noted. The patient was discharged with prescription of a maintenance dose of corti-

sone. Two days later she was readmitted in a state of severe confusion and mania. Paranoid schizophrenia (previously existing) was diagnosed. While the patient was completely out of touch with reality, the skin was clear but the eruption gradually recurred as the mental status improved. When last observed, seven months after hospitalization, the patient was in a vastly better psychic state and the condition of the skin was slightly improved.

In this case there were two complications of ACTH and cortisone therapy. The first was pyogenic infection which would not heal while ACTH was being given, possibly due to the inhibition by the hormone of the immunizing reactions of the tissues or to an alteration of the powers of the circulating leukocytes.[3] The rapid improvement following the withdrawal of the hormone points to some interference in tissue reaction to infection. It is well known that ACTH and cortisone do have certain psychic effects. Euphoria is by far the most common, but depressive states do occur and possibly other aberrant psychic states can develop. The opinion of Hoffer and Glaser[5] is that ACTH and cortisone do not cause psychosis but merely bring to light a condition that was already present. In the case reported herein, the schizophrenic state had been present previously.

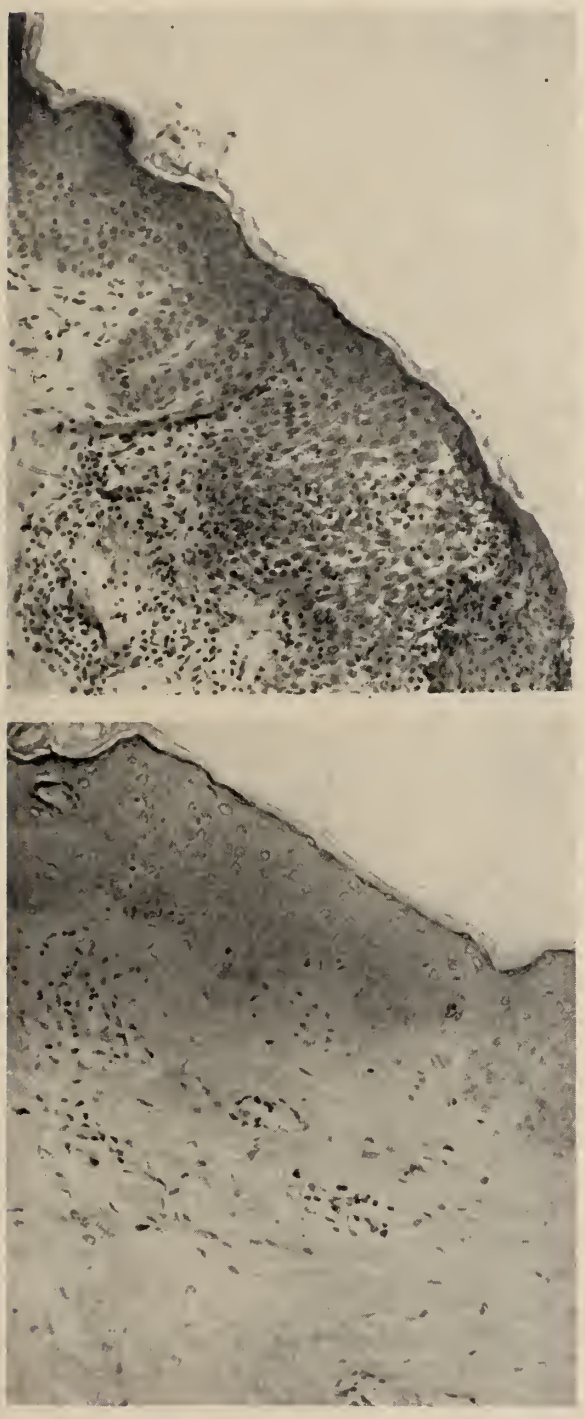

Figure 4.—Skin, arm, atopic dermatitis, before treatment and at eighth day of cortisone treatment.

ACTH or cortisone therapy is indicated in atopic dermatitis if the condition has been present for a long time and is refractory to all other methods of therapy. Use of the steroids may break a vicious cycle and shorten an already long drawn-out disease, but this cannot be a firm conclusion until reports of longer follow-up periods are available. These agents should be used until a maximum effect is reached and then reduced gradually to a maintenance level. Bland topical therapy with sedation should be instituted at the same time, and if the ACTH or cortisone is gradually withdrawn, a rebound relapse may thereby be prevented.

In cases of atopic dermatitis in which there is a strong emotional element, psychotherapy might well be begun when treatment with ACTH or cortisone is started because of the euphoric state which seems to make the patient a more willing subject. Three patients in the present series were treated in that way and after three months of follow-up the results were very encouraging.

CONCLUSIONS

Cortisone and ACTH therapy should not be used indiscriminately in patients with diseases of the skin. In all dermatoses, except those which are usually of a temporary nature, results with ACTH and cortisone are disappointing. At present it cannot be said that any of the patients in the series here reported upon were cured. Although in seven of 22 cases of atopic dermatitis there were remissions of from two to five months at the time of report, this is not a long enough time to permit conclusion that cortisone or ACTH will break the cycle of periodic relapses in such cases.

Results of studies by the authors and by other investigators would appear to indicate a definite place for the use of ACTH or cortisone in treating "drug eruptions" and long-standing cases of atopic dermatitis where other methods have failed.

REFERENCES

1. Baker, B. L. and Castor, C. W.: Cutaneous atrophy induced by local treatment with adrenocortical steroids, Anat. Rec., 106:173, Feb. 1950.

2. Crassweller, P. C., Farmer, A. W. and Franks, W. R.: Experimental burn studies including treatment with corti-

sone-active material extracted from urine, Brit. M. J., p. 242, July 1950.

3. Fischel, E. E.: The relationship of adrenal cortical activity to immune responses, Bull. New York Acad. Med., 26:255, March 1950.

4. Germuth, F. G., Jr. and Ottinger, B.: Effect of 17-hydroxy-11-dehydrocorticosterone (Compound E) and of ACTH on Arthus reaction and antibody formation in the rabbit, Proc. Soc. Exper. Biol. & Med., 74:815, Aug. 1950.

5. Hoffer, F. A. and Glaser, G. H.: Effects of pituitary adrenocorticotropic hormone (ACTH) therapy: Electroencephalographic and neuropsychiatric changes in fifteen patients, J.A.M.A., 143:620, June 1950.

6. Proceedings of the First Clinical ACTH Conference 1950, Blakiston Company.

7. Ragan, C., Howes, E. L., Plotz, C. M., Mayer, K. and Blunt, J. M.: Effect of cortisone on production of granulation tissue in rabbit, Proc. Soc. Exper. Biol. & Med., 72:718, Dec. 1949.

8. Selye, H.: Effect of ACTH and cortisone upon the anaphylactoid reaction, Canadian Med. Asso. J., 61:553, May 1949.

9. Sprague, Randall G., Power, Marschelle H., Mason, Harold L., Albert, A., Methieson, Don R., Hench, Philip S., Kendall, Edward C., Slocumb, Charles H. and Polley, Howard F.: Observations in the physiologic effects of cortisone and pituitary adrenocorticotropic hormone (ACTH) in man, Arch. Int. Med., 85:199, Feb. 1950.

10. Thorn, George W., Forsham, Peter H., Frawley, Thomas F., Richardson, Hill S., Jr., Roche, Marcel, Staehelin, Dietrich, Laurence, Wilson D.: Medical progress: The clinical usefulness of ACTH and cortisone, New England J. of Med., 247:783, May 18, 1950; 247:824, May 25, 1950; 247:865, June 1, 1950.

11. Unpublished data.

12. Whitaker, W. L. and Baker, B. L.: Inhibition of hair growth by the percutaneous application of certain adrenal cortical preparations, Science, 108:207, August 1948.

13. Whitaker, W. L. and Baker, B. L.: Relationship of the Adrenal Cortex to Inhibition of growth of hair by estrogen, Am. J. Physiol, 159:118, October 1949.

Control of Pulmonary Hemorrhage by Intravenous Use of Pituitrin

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SUMMARY

Pituitrin® is the best available drug for control of severe pulmonary hemorrhage. It must be used intravenously to be effective. Untoward effects are minimal and transient if the technique described is scrupulously followed.

It can be used immediately for control of pulmonary hemorrhage from whatever cause. An adequate diagnosis of the pulmonary condition responsible for the hemorrhage must then be made.

THE intravenous use of pituitary extract for the control of pulmonary hemorrhage was first suggested by the physiologist Carl J. Wiggers in 1911.[23, 24] Wiggers carried out a series of experiments on animals, using several different drugs, and he concluded: "The drug that combines an ability to elevate the systemic arterial pressure and simultaneously to lower that in the pulmonary circuit is the ideal physiological agent to employ. In the entire gamut of drugs investigated, pituitary extract is the only one that possesses this fortunate combination of actions." Following Wiggers' report, specialists in diseases of the chest in this country began to use Pituitrin.® They gave it intramuscularly, however, instead of intravenously, and its effect on pulmonary bleeding when used in this manner was disappointing.[4, 9, 21] It remained for the French physician Edouard Rist to use pituitary extract intravenously. He reported 12 cases to the Medical Society of the Hospital of Paris in 1913[18] and in each of these there was almost immediate stopping of the pulmonary hemorrhage. In a book, published in 1943, Rist[19] stated, "Intravenous injection of Pituitrin is so superior to the other treatments of hemoptysis that it is perhaps not very profitable to spend time on the other drugs used medically for this purpose."

It was the review of Rist's book that led the late Max Pinner to suggest to the authors, in 1947, the intravenous use of Pituitrin to control bleeding from the lungs. Since that time the authors have administered or supervised the intravenous administration of pituitary extract on 78 occasions to 48 patients. The great majority of the patients had severe or repeated hemoptysis, and the control of bleeding was usually quite prompt. Obviously, no drug can be of any avail in sudden massive hemoptysis such as may be caused by hemorrhage from the rupture of an aortic aneurysm or of a Rasmussen's aneurysm of a large vessel.[2, 14, 17] Also, the authors do not resort at once to the intravenous use of Pituitrin for the control of slight hemoptysis or of bleeding that causes only streaking of the sputum. In such cases, strict bed rest, mild sedation of the cough reflex and reassurance are usually all that is necessary to control the bleeding. It is in cases of hemorrhage intermediate between the extremes mentioned—cases in which there is brisk bleeding or repeated moderate episodes of bleeding—that the intravenous use of Pituitrin has been observed to be most effective. In such situations, the result is almost as if forceps had been applied directly to the bleeding vessel. Dale,[3] reporting upon experimental studies, said that in animals the vessels in the lungs, like those in other tissues, are constricted by pituitary extract.

It is, of course, of paramount importance to determine the cause of bleeding once the acute phase has subsided, unless the cause is already known. In the cases upon which the present report is based, the causes of bleeding, in the order of frequency, were pulmonary tuberculosis, bronchiectasis, lung tumor, coccidioidomycosis, and rheumatic heart disease.

TECHNIQUE OF ADMINISTRATION

The technique of administration, as previously described,[22] is to dilute 10 international units of Pituitrin (1 cc. of Obstetrical Pituitrin or 0.5 cc. of Surgical Pituitrin, Parke, Davis and Company) in 10 cc. of normal saline solution and to inject this solution slowly over a ten-minute period into a vein in the arm. The patient is kept in the supine position. During the injection the pulse rate may not change or it may accelerate slightly. The blood pressure usually remains constant before and after injection. A short time after the introduction of the drug into the blood stream, the patient may complain of dizziness, and the powerful vasoconstrictor action of the drug is noted in an intense pallor of the face and extremities. This may be followed by slight abdominal cramping and an urge to empty the bowels and the bladder. Nausea is of common occurrence toward the end of the injection and it may result in the emesis of clotted blood swallowed during the course of the hemoptysis. It is well to keep a bedpan and an emesis basin handy. These effects rapidly disappear. No serious untoward effects have been observed.

Following the injection, the patient may continue to raise clots of blood and small amounts of blood-streaked sputum, but this is from residuum in the

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bronchial tree, not from fresh bleeding. Further bleeding may occur after a period of hours or days, necessitating further intravenous injections of the drug, but, in general, one intravenous injection of pituitary extract will serve to control the most severe episode of pulmonary hemorrhage.

Although the authors have not had occasion to use Pitressin® intravenously, the pharmacological literature reviewed would suggest that this drug has the same vasoconstrictor action as Pituitrin and is devoid of the undesirable oxytocic principle.[7, 15, 20] There is some evidence to indicate that the toxicity of Pitressin is greater than that of Pituitrin.

Experimentally, both drugs have been observed to have a powerful vasoconstrictor action on the coronary circulation as well as on the peripheral circulation.[6, 13] Katz,[6] in experiments on a normal denervated dog's coronary vessels perfused in situ with defibrinated dog's blood, found it was possible to make direct determination as to whether a substance has a vasodilator or vasoconstrictor action on these vessels. Besides the direct effect of the drug in actively altering the caliber of coronary vessels, it may also passively change their caliber by its other actions. It is the change in the ratio of coronary caliber and coronary flow to the work and energy expenditure of the heart that is the important criterion in determining the value of any drug. Pitressin was observed to cause powerful vasoconstriction in these experiments; and it was noted that with large doses the utmost effect may be continued for half an hour or more.

Kolls and Geiling,[7] using Pituitrin intravenously in dogs, observed that it caused a paling of the skin and of the visible mucous membranes. This reaction was more pronounced in animals that were not anesthetized than in those under ether anesthesia. With larger doses, apnea with alternating periods of rapid, shallow respiration occurred as a constant phenomenon in animals that were not anesthetized. In animals under ether anesthesia, little change in respiration was noted. Circulatory changes noted in unanesthetized dogs were: (1) a rise in the mean pressure due chiefly to increase in diastolic pressure indicating increased peripheral resistance (systolic level plays a subordinate role); (2) a decrease in the pulse pressure; (3) a pronounced slowing of the cardiac rate; (4) a decrease in the minute volume output of the heart, although the output per beat may be unaltered or may be lowered. Cardiac dilatation, observable fluoroscopically and in x-ray films, may occur. These changes, indicating intense peripheral constriction of arterioles and capillaries, were verified by direct observation of blood vessels in the dog's ear. Slowing of the heart occurred after removal of vagus influence by large doses of atropine sulfate, suggesting direct action on the myocardium or diminished coronary flow.

Melville[10] also showed by experimental methods that any deleterious cardiac effects induced by the injection of a large dose of posterior pituitary extract in normal unanesthetized dogs were entirely secondary to the coronary constricting action. No evidence of any direct injurious effect of the extract on the myocardium could be demonstrated.

Ross, Dreyer and Stehle[20] stated that the coronary flow and cardiac output, determined simultaneously in experimental animals before and after Pituitrin was given, indicated that coronary spasm is one of the important factors which may cause a fall in blood pressure under certain conditions. (The authors have observed no such effect in patients who were given Pituitrin in the dosage and by the method previously described.)

Woodbury, Hamilton and Volpitto[25] observed transient decreases of 30 to 50 mm. of mercury in arterial pressure in anesthetized and unanesthetized patients following intravenous and direct uterine administration of surgical or obstetrical Pituitrin. They also noted that the intravenous administration of 3 units of Pitressin caused very small rises in blood pressure.

The vasoconstrictor action of pituitary extract is apparently greatly enhanced by the use of barbiturates, particularly barbiturate anesthetics such as sodium Pentothal.®[1, 5, 11]

Although the authors noted no difficulty attributable to coronary constriction in the intravenous use of Pituitrin in several elderly patients with rather advanced generalized arteriosclerosis, in view of the experimental observations it is well to be on the lookout for such an effect. However, use of Pituitrin in the dosage and with the technique previously described seems not to entail difficulties of that kind. Rist, in much longer and wider experience, noted no untoward incidents he could attribute to coronary constrictive action of Pituitrin.

EFFECT WHEN USED WITH BARBITURATES

There are numerous references in the obstetrical and anesthesiological literature to the use of Pituitrin, largely by injection intramuscularly or directly into the uterus. It has been reported that giving Pituitrin to obstetrical patients who have had analgesic doses of barbiturates may have an adverse effect. Raginsky and Stehle[16] noted that cardiac sensitivity to the harmful effects of pituitary extract was greatly increased—as much as twenty fold—if the heart was perfused with blood containing sodium phenobarbital. They expressed belief that sodium phenobarbital reduces the work capacity of the heart muscle so that the impairment of the coronary circulation by pituitary extract has a more pronounced deleterious effect.

Koppanyi[8] noted increased incidence of Pituitrin shock when the drug was given in connection with barbiturates.

Hesselschwerdt and Medbury,[5] discussing circulatory collapse following the combined use of Pituitrin and Pentothal, noted that barbiturate anesthesia has a definite catalytic effect in producing collapse when combined with Pituitrin. Pituitrin shock is a definite clinical entity. The posterior pituitary extract contains an oxytocic and pressor factor. Pitocin,® which contains the oxytocic factors, stimulates the myometrium. Pitressin, which contains the pres-

sor factor, constricts capillaries and small arterioles. Pituitrin shock appears to be the end result of the pressor factor on the coronary arteries. The role of Pentothal in precipitating Pituitrin shock is not specific. With regard to direct depressive effect on the myocardium, phenobarbital differs from Pentothal chiefly in duration of action. Hesselschwerdt and Medbury expressed the opinion that Pituitrin and Pentothal, used together, have synergistic effect that causes myocardial anoxia: The coronary constriction of Pituitrin and the direct myocardial depression of Pentothal may produce shock.

Adelman and Lennon,[1] discussing Pituitrin shock, described an anaphylactic reaction—skin edema, urticaria, dyspnea, and shock—in a patient who then responded to epinephrine plus intravenous administration of fluid. In reviewing reports in the literature and seven cases of Pituitrin shock they had observed in anesthetized patients, Adelman and Lennon called attention to the occurrence of bradycardia, which, they believed, might be due to vagal stimulation, to direct myocardial action, or to intense coronary constriction.

The authors have not observed untoward reactions in any of the patients who were given Pituitrin intravenously, in the manner previously described, for the control of pulmonary hemorrhage. Nor have such reactions been noted by Rist when using Pituitrin according to this technique. None of the patients observed by the authors had had more than minimal doses of barbiturates within several hours of the time Pituitrin was injected.

The coronary dilating action of ephedrine and epinephrine apparently counteracts the constricting action of Pituitrin in experimental animals (Melville and Stehle[12]). This has been confirmed clinically. The manner in which this antagonistic action occurs is not entirely clear. (The authors have had no occasion to use these substances.)

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REFERENCES

1. Adelman, M. H., and Lennon, B. B.: Pituitrin shock, Am. J. Obst. and Gynec., 41:652, April 1941.

2. Bogen, E.: The pathogenesis of tuberculous hemoptysis: A clinical pathological investigation, Am. J. Clin. Path., 2:299, July 1932.

3. Dale: Biochem. J., 4:426, 1909.

4. Emile-Weil, P., and Boye: Different actions of Pituitrin on the coagulation of blood in man and rabbit, Bull. Soc. Biol., 67:428, 1909.

5. Hesselschwerdt, D. W., and Medbury, S. E.: Circulatory collapse following the combined use of Pituitrin and Pentothal, Anesthesiology, 10:544, Sept. 1949.

6. Katz., L. N., and Lindner, E.: The reaction of the coronary vessels to drugs and other substances, J.A.M.A., 113: 2116, Dec. 9, 1939.

7. Kolls, A. C., and Geiling, E. M. K.: Pharmacology of extracts of the posterior lobe of the pituitary gland, J. Pharmacol. & Exper. Therapy, 24:67, Aug. 1924.

8. Koppanyi, T.: Personal communication to Hesselschwerdt and Medbury.[5]

9. Livon: Different actions of Pituitrin on the blood of a dog, Bull. Soc. Biol., 67:648, 1909.

10. Melville, K. I.: J. Pharmacol. and Exper. Therapy, 64:86, 1938.

11. Melville, K. I.: Cardiac response to posterior pituitary extract as affected by sodium phenobarbital, J. Pharmacol. and Exper. Therapy, 66:107, May 1939.

12. Melville, K. I., and Stehle, R. L.: Antagonistic action of ephedrine (or adrenalin) upon coronary constriction produced by pituitary extract and its effect on blood pressure, J. Pharmacol. and Exper. Therapy, 42:455, Aug. 1931.

13. Nelson, E. C.: Discussion of paper by Katz and Lindner, J.A.M.A., 113:2119, Dec. 9, 1939.

14. Plessinger, V. A., and Jolly, P. N.: Rasmussen's aneurysms and fatal hemorrhage in pulmonary tuberculosis, Am. Rev. Tuberc., 60:589, Nov. 1949.

15. Raginsky, B. B., Ross, J. B., and Stehle, R. L.: Action of pituitary extract upon blood pressure, J. Pharmacol. and Exper. Therapy, 38:473, April 1930.

16. Raginsky, B. B., and Stehle, R. L.: J. Pharmacol. and Exper. Therapy, 44:385, 1932.

17. Rasmussen, B.: On hemoptysis, especially when fatal, in its anatomical and clinical aspects, translated by W. D. Moore, Edinburgh M. J., 14:385, 1868.

18. Rist, E.: Treatment of hemoptysis by intravenous injection of Pituitrin, Bull. and Mem. Soc. Med. of Hospital of Paris I, 1:776, 1913.

19. Rist, E.: Les Symptoms de la Tuberculose Pulmonaire, Masson et Cie., p. 110, 1943.

20. Ross, J. B., Dreyer, M. B., and Stehle, R. L.: Cardiac action of pituitary extract (posterior lobe), J. Pharmacol. and Exper. Therapy, 38:461, April 1930.

21. Savy, P.: Treatment in Therapeutic Medicine, Masson et Cie., 2:1447, 1940.

22. Trimble, H. G., and Wood, J. R.: Pulmonary hemorrhage: Its control by the use of intravenous Pituitrin, Dis. of Chest, 18:345, Oct. 1950.

23. Wiggers, Carl J.: Physiological investigation of the treatment of hemoptysis, Arch. Int. Med., 8:17, July 1911.

24. Wiggers, Carl J.: The physiology of the pituitary gland and the actions of its extracts, Am. J. M. Sc., 141: 502, April 1911.

25. Woodbury, R. A., Hamilton, W. F., and Volpitto, P. P.: Am. J. Physiol., 129:500, 1940.

Public Relations in the Practice of Allergy

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SUMMARY

Because allergists are in a fairly recently developed and not widely well understood specialty, they must give more than ordinary attention to good relations with the public and with other physicians.

They can help put their specialty in the proper light by:

1. Explaining rather than attempting to conceal, diagnosis and treatment of allergic disease to practitioners in other fields of medicine.

2. Acknowledging the referral of patients and giving the referring physician reports on the progress of each patient.

3. Explaining to patients the nature of allergic sensitivity, the procedures necessary for diagnosis, and the probability that cure will take a relatively long time and, hence, probably will be more costly than is treatment of simpler diseases.

4. Avoiding confusing patients by giving advice, based on faddist notions, which may conflict with more conventionally grounded information given by another physician.

5. Making certain that all members of the office staff have and exercise the ability to make patients feel good. Disruption of physician-patient and nurse-patient relationship by pecuniary considerations must be averted.

PUBLIC relations is that relationship or association which exists between any individual or organization and the public. Thus, public relations for the allergist cover the entire scope of his relationship with all segments of the population, both lay and medical.

Since allergy is one of the most recently developed specialties in the field of medicine, there is probably no other specialty which is more in need of a good, sound approach to public relations. This is true not only as it applies to the allergist's relations with his patients and the lay public, but also to his relations with other specialists and general practitioners.

Just as in all other branches of medicine, or indeed in any human endeavor which necessitates human relations of any kind, the art of making people feel good is quite as important to the successful allergist as is medical knowledge, skill and training. In fact, this ability at times seems almost to overshadow true medical skill. Physicians found wanting in their technical approach to medicine may nevertheless be extremely successful in the art of medicine. On the other hand, a physician may have had excellent training and be possessed of great technical skill yet be unsuccessful in patient relations. Some physicians, like successful men in other fields, seem to possess inherently the ability to make others like and trust them. Such men are indeed fortunate. Human relations, or public relations, for these favored few are always successful. Instinctively, they generate in their patients a feeling of security, confidence and well-being. However, for the vast majority of physicians this art must be acquired and cultivated.

The profession of medicine is most often chosen because of a profound longing to help suffering humanity by healing its ills and binding its wounds. Such an urge is accompanied by a natural desire for affection and appreciation from the patient, and when such a response does not occur, the physician as well as the patient suffers from a feeling of frustration. When such a feeling exists, the doctor is not likely to achieve the best results, and the patient, baffled and dissatisfied with both the results and his relationship with the physician, is certain to look elsewhere for more satisfactory doctor-patient relations.

Ideal, or nearly ideal, patient relations can be attained by physicians as a whole, and allergists in particular, if sufficient thought is given to the problem and constant effort and care are exerted. Because allergy is such a new specialty, much misinformation has been and is still being disseminated both by the medical profession and by the lay public. Popular magazines constantly appear with articles about allergic disease which have been written by wholly unqualified persons. Many physicians in other specialties and in general practice either refuse to acknowledge, or fail to recognize, an allergic condition, or they treat it incorrectly with resultant dissatisfaction to both the patient and the physician. This builds up an unjust antagonism toward the science of allergy in the minds of both the patient and the physician. Some allergists, themselves, are in part to blame for such an unhappy situation. Within the specialty are physicians who do not wish to explain allergy to other practitioners but take the attitude that by keeping all this knowledge within their specialty they keep others out of the field. This is fallacious thinking, for by helping physicians in other fields to properly care for patients with mild

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allergic disease, good will for the entire specialty is built up and successful results are obtained which do much to impress upon the public the value and importance of this specialty. With antagonism absent, patients with severe and acute allergic disease will be referred to specialists.

In certain medical fields, such as surgery, for example, only limited cooperation and effort are required from the patient. The results depend almost entirely upon the skill of the surgeon; except for the period of convalescence the patient takes no active part in correcting his condition. This is not true with allergy, however. Patients with allergic disease must cooperate and cooperate if satisfactory results are to be attained. Consequently, the fullest possible explanation should be given to the patient concerning his condition, its cause, the treatment for it and the probable prognosis.

It is desirable that this explanation be not technical; the fewer the medical terms used, the clearer the explanation. A long discussion of allergy in difficult medical terms not only fails to enlighten the patient but may either frighten or bore him.

Since hyposensitization is a long and tedious process, requiring the fullest cooperation on the part of the patient, it is well to give him some idea of this at the first consultation. It is not wise to present the problem in such a frightening way that the patient becomes completely discouraged and decides that the cure is worse than the disease; but neither should such a rosy picture be painted as to give him the impression that a half-dozen office visits and the application of a few tests are all that will be required to eliminate the disease and make him feel entirely well again. He should be made to know that considerable testing is usually necessary and that injections may have to be taken for a fairly long period. On the other hand, he should be encouraged in regard to the ultimate outcome. Also, if the patient is suffering acutely from some allergic condition, nothing will so build his confidence in the allergist as the immediate, if temporary, relief which can be obtained from some of the antihistaminics.

It is very necessary to emphasize the importance of diet and avoidance of known allergens. Since it is in these matters that the patient's cooperation is of greatest assistance, these points should be stressed at the first consultation.

OFFICE PERSONNEL

It is of the greatest importance to choose office assistants who are not only capable but who also make the patients feel good. In the practice of allergy, which involves frequent office visits by the patient over a long period, it may not be possible or practical for the allergist to see the patient at every visit. As the nurse, rather than the physician, often deals with the patient, it is imperative not only that she be competent and well trained, but that she have, in pronounced degree, the ability to make people feel good. This is also true with regard to the receptionist, bookkeeper and secretary, whether all the jobs are done by one person or by several persons. A surly, unpleasant or harsh telephone voice, for instance, can drive patients away before they even make the first appointment. A cheerful, friendly and interested telephone voice, on the other hand, establishes friendly relations at once.

Discussion of the cost of treatment at the patient's first visit is highly desirable. In this way misunderstandings are avoided and the basis is established for much happier relations throughout the entire period of treatment. This discussion may be between the doctor and the patient, or if a bookkeeper is employed, it may be desirable to have her assist with the financial arrangements.

An allergist should never himself press a patient for payment of an overdue bill; that is a task for someone not directly involved in the physician-patient relationship. If the physician or a nurse who deals with the patient clinically has to take action to collect a bill, the friendly patient relationship is disrupted and very often completely destroyed. The patient often discontinues treatment entirely, although in some instances he may go elsewhere. In either case, all or most of the effort expended has been fruitless both for the patient and the doctor. However, if there is a third person in the office who can handle the business side of the patient relations, the sympathetic and friendly association between the doctor and the nurse and the patient often remains undisturbed even when payment is made reluctantly.

In the matter of collections, the greatest of care must be exercised in order to maintain friendly relations. It is to be expected that the bookkeeper will be the recipient of all complaints, whether warranted or not, concerning bills. Firmness is necessary where financial matters are concerned, but this should be accompanied by an unfailing attitude of friendliness and helpfulness and a willingness to hear the patient out. When a patient is angered over a bill, whatever may be the reason, nothing so relieves his feeling of resentment as being able to tell the person whom he considers responsible just what he thinks about the whole matter. Many times his ruffled feelings can be soothed and he will leave the office feeling pretty good after all if he has been permitted to get the whole matter off his chest and has been met with friendliness and understanding, notwithstanding that he still has to pay the bill.

Better public relations can be established if the subject of allergy is better understood by the public. One way to reach the public is by accurate but nontechnical articles in lay magazines and other publications. Aso, when opportunity presents, it is well to give brief and interesting talks before various lay groups such as parent-teacher organizations, service clubs, breakfast clubs and the like. It also furthers friendly relations if the allergist affiliates himself with some good lay organization such as a service club. In this way he comes to know business men and men from the other professions in a friendly, informal way, and such associations go far to build confidence and respect for his specialty.

A large percentage of an allergist's practice will

naturally come from other physicians who refer their problem cases to him, and an excellent means of building good public relations is to acknowledge such referrals at once. A simple printed card on which the patient's name is added in the appropriate space can be used and should be mailed immediately following the first visit. After study of the patient has been completed a full report should be mailed to the referring physician, and if hyposensitization treatments are given in the allergist's office, progress reports should be forwarded from time to time. If the patient is returned to the referring physician for hyposensitization treatments, careful supervision should be maintained by the allergist. A satisfactory way to attain this end is to determine the maximum interval that is desirable between visits to the allergist's office and then supply just enough antigen to take care of the injections for that length of time. As the patient usually will return when the antigen supply is exhausted, supervision is maintained. The results thus obtained are far more satisfactory than they would be otherwise, and a feeling of good will is engendered for the allergist and for the specialty as a whole.

HELPING OTHER PHYSICIANS

It is no secret that other specialists and general practitioners are treating most patients with allergic disease in their own office. Such being the case, it is extremely foolish for an allergist to attempt to keep all special knowledge of treatment within his own specialty. Instead, he can render his specialty a real service by instructing other physicians in the rudiments of good practice in his field. This can be done by speaking, when invited to do so, before various medical groups such as meetings of other specialists, county medical society meetings, and hospital staff meetings. Allergists who can do so should also write articles for the various medical journals. Good will and friendliness for individual allergists, and so indirectly for the entire specialty, is generated by regular attendance at various medical meetings and a display of genuine interest in other physicians' problems and difficulties.

Physicians who do not specialize solely in the practice of allergy seldom wish to stock the necessary material for complete allergenic studies and hyposensitization treatments but content themselves with applying a few skin tests and injecting one or two stock antigens. Symptomatic treatment with the antihistamines frequently is used in conjunction with this treatment. In simple, uncomplicated cases of seasonal allergic rhinitis, urticaria and angioneurotic edema, such care is often effective. However, when a patient has a more serious and complicated allergic disease, treatment of that kind is inadequate. Accurate information concerning allergic conditions actually encourages general practitioners or other specialists to refer such patients to allergists.

There is a growing tendency among allergists to go off on tangents and to emphasize certain etiological factors to such a degree that they lose sight of the general field of allergy. This is especially true of allergists who wander into the field of psychosomatic therapy; they may have patients psychoanalyzed and then depend upon their particular brand of psychotherapy instead of relying upon the standard, proven techniques. Certain of these hybrid allergists have a mania for speaking before all sorts of medical and allied groups in order to plump for their particular notions. They have thus obtained national publicity which has been very detrimental to the specialty of allergy because the information thus disseminated both to physicians and to laymen is false in that it has given the idea that there is no need for study of more than a single facet of allergic disease, or for diagnosis and skin testing, and that hyposensitization treatments are wholly unnecessary. Any reputable allergist will agree that in many cases of allergic disease there is a psychogenic factor for which treatment should be given; but to blame the entire condition on this cause, and to treat only for that, is as fallacious as to treat all maladies wholly with prayer.

Recently the author referred a patient to another allergist because the patient wished to be sent to a physician close to his home. Complete information as to diagnosis and treatment was forwarded to the other allergist, together with specific antigens. Receipt of them was never in any way acknowledged. Later the patient reported that the physician criticized the author's method of diagnosis, refused to continue the recommended treatment, and failed to obtain satisfactory results. The patient's confidence in the efficacy of allergic treatment was completely destroyed.

Not long ago a patient who had gone to another allergist came to the author. She had bronchial asthma, allergic rhinitis, gastrointestinal allergic disease, migraine, and recurrent attacks of urticaria. Despite this history, skin tests with only a very few of the pollens and other inhalants had been carried out. The patient had never been questioned concerning food habits, and no food tests were applied. The allergist had told the patient that food had nothing to do with her condition and that, in his opinion, food was not a factor in allergic disease. When skin tests were applied by the author, very severe reaction to a number of common foods was noted. A food diary was kept and it was noted that symptoms developed after ingestion of certain foods. Sensitivity to a number of pollens and inhalants was noted also. The elimination of the allergenic foods, together with hyposensitization, cleared the allergic condition to such a degree that further medical supervision was unnecessary.

The allergist who adopts an attitude such as the foregoing causes patients to wonder how two physicians in the same specialty could give advice so diametrically opposed, which makes for bad feeling toward the entire specialty.

Allergists frequently observe patients with very severe allergic conditions, particularly asthma and allergic rhinitis, who state that they have been under the care of various physicians who have advised

against their consulting an allergist because it will do no good, or because the expense is prohibitive or because they will have to have injections for the rest of their lives. Such advice, often given by physicians who are respected in their particular fields, indicates a lack of good public relations on the part of allergists. It stems from failure to reach these physicians with accurate information as to the cause of allergic disease, the methods and length of treatment and the fact that the expense is not exorbitant.

Some allergists become panicky when new medical discoveries are made. There were many who felt that the specialty would cease to exist when the antihistamines appeared, and more were certain that the antibiotics would eliminate the specialty. Then, when cortisone and adrenocorticotropic hormone was available the faint-hearted were positive that allergy, as a specialty, would soon be no more. It is quite true that in certain allergic conditions all of these new drugs are helpful, but no one of them is the final answer. No good allergist would fail to use these miracle drugs as a supplement to regular treatment, but they are only supplements and not magic cure-alls. They do not eliminate the need for careful allergic studies and hyposensitization for permanent and satisfactory results.

Good public relations are of vital importance to the specialty of allergy, and every practitioner of the specialty should make the building of good will toward physicians in general, and the specialty in particular, a matter for personal concern. This may be accomplished by constantly improving relations with patients, with other members of the lay public and with physicians in other branches of medicine. A conservative approach to allergy along lines and with techniques which have been proven clinically creates confidence in the specialty on the part of the lay public and among other members of the profession alike. A radical, irresponsible approach destroys such confidence. Knowing that it grew out of a great need, allergists should have faith in their specialty. The science of allergy is no fly-by-night fad; it is one of the pillars of medicine, resting on the firm foundation of clinical experience.

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Mediterranean Anemia

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SUMMARY

There are two forms of Mediterranean anemia, one mild, the other severe. The major variety is characterized by pronounced anemia and systemic changes. In the minor form, usually there is no anemia or other clinical abnormality. The milder disease is relatively common in Italians, but both forms may occur in persons of non-Mediterranean ancestry, as well as in those who come from areas adjoining the Mediterranean Sea. Diagnosis of the disease is made on the basis of history, clinical observation, roentgen studies of the bones, and exceptionally painstaking laboratory tests. Periodic transfusions of whole blood are necessary for persons with the more severe form of the disease.

IN 1925, Cooley and Lee[5] described a series of patients with anemia, splenomegaly, and changes in the bones which made up a disease entity that became known as "Cooley's anemia," "Mediterranean anemia," "erythroblastic anemia," "thalassemia," "target-cell anemia," and "hereditary leptocytosis." The purpose of this presentation is to point out the important diagnostic criteria, to emphasize the relative frequency with which the condition occurs, and to indicate the variations which may occur in this disease.

Mediterranean anemia is probably due to an inherited defect of the erythrocytes which may result from an inability to synthesize hemoglobin, or to utilize iron in a normal fashion. It may occur in a severe form, characterized by pronounced changes in the blood and in various organ systems, or it may be of a minor order with little or no anemia and no systemic changes. Formerly, it was believed to be a relatively rare disease, but in recent studies[19] of persons of Italian descent it was observed that the severe variety occurred approximately once in 2,500 births, and the lesser condition once in each 25 persons. In any family in which one member has the severe form of the disease, other members have the mild form.

The diagnosis of Mediterranean anemia can be made with comparative ease if it is of the severe type; but diagnosis of the milder form, on the basis of results of routine examination of the patient, is difficult. However, by proper testing of the patient and a study of the family, the correct diagnosis can be achieved. It is almost mandatory for the physician to supervise closely and participate in the interpretation of the various laboratory tests. In most instances a technician's report of the available data must be further evaluated by the physician. He should examine blood and bone marrow smears himself in order that he may observe the important, but easily overlooked, changes that may be present.

The major form of Mediterranean anemia is characterized clinically by: anemia, which starts in the first year of life and may be associated with very slight jaundice; enlargement of the liver and spleen, which may be of such degree as to cause abdominal distention; flattening of the face, with prominence of the cheek bones, causing a mongoloid appearance; and eventual enlargement of the heart, and chronic passive congestion as a result of repeated severe episodes of anemia.

Roentgen examination of the bones may be of aid in diagnosis of the severe form. Departure from the normal architecture may be noted. In the skull there may be widening of the marrow spaces, thinning of the outer and inner tables, and perpendicular ("hair on end") striations between these tables. However, although the changes of the skull are mentioned most often, in the author's experience the earliest and most pronounced changes usually occur in the metacarpal bones and in the distal portion of the humerus and proximal part of the ulna. In the medullary portions of the bones, decreased density, increased prominence of the trabeculae, and widening of the medullary space may be noted before any abnormality of the cranium is present.

Patients with Mediterranean anemia do not have crises with abdominal pain and evidence of severe hemolysis such as may occur in other congenital anemias of childhood.

Although the disease in both its major and its minor forms is most common in the peoples of the area surrounding the Mediterranean Sea (especially Italy, Greece, Syria, and Armenia), an increasing number of cases is being reported in non-Mediterranean—in persons of Argentine,[2] Egyptian,[8] Chinese[10, 12, 13, 24, 29] English,[1] French,[20] German,[11] Indian,[3, 4, 7, 16, 17, 18, 21] Negro,[6, 9, 15, 23, 28] Philippine,[27] Spanish,[14, 25] and Turkish[22] ancestry. During the past four years the author has observed cases of both major and minor types in Chinese, Mexican, and French-Philippine children.[26]

Anemia is usually pronounced in persons with the major form of the disease. In most instances, the reduction in hemoglobin and in the volume of packed erythrocytes in the blood, as determined by hematocrit, is relatively greater than the reduction in the number of erythrocytes per cubic millimeter of blood. The determination of this disproportion is most important, since Mediterranean anemia is one

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of the few conditions in which the anemia is of hypochromic microcytic type.

The erythrocytes vary greatly in size (anisocytosis) and in the amount of hemoglobin which they contain. In some cells the hemoglobin that is present may be observed only as a thin layer on the periphery of the cell, while in others there may be an accompanying circular area of pigment in the center (target cell). Basophilic stippling often is noted and it may be quite pronounced. Nucleated erythrocytes characteristically are found in the peripheral blood. They may be few in number or they may outnumber the leukocytes. In addition, there is an increase in the number of reticulocytes. Increased resistance of the red corpuscles, as tested by hypotonic saline solutions, is a most significant characteristic and one of the most helpful in arriving at a diagnosis. Hemolysis of some of the cells occurs when saline solutions in which normal cells rupture are used, but some may resist even 0.20 per cent solutions.

The determination of red cell fragility often gives valuable information in this and other types of childhood anemia. It need not be performed on venous blood since a simplified method of testing, using capillary blood, has been described.*

The minor form of Mediterranean anemia usually has no clinical manifestations, although evidence of mild anemia is present in some instances. Splenomegaly, if present, is of minor degree and no abnormalities are observable in roentgen examination. This variety is numerically much more important than the major form, since it occurs about one hundred times as frequently.

The performance of most of the previously mentioned studies is essential in examination of persons suspected of having the minor condition, since pronounced changes of the blood may be present even in the absence of anemia. Like the severe disease, the minor form also is characterized by pronounced disproportion between the number of erythrocytes and the hemoglobin content of the blood. (This was especially striking in the parents of one patient who had the major form of Mediterranean anemia. The blood of the mother had a normal hemoglobin content (14.6 gm. per 100 cc.) and normal ratio of packed erythrocytes to whole blood (47 cc. per 100 cc.), but the number of erythrocytes was 7,450,000 per cubic millimeter; and in the father's blood the hemoglobin was 14.3 gm. per 100 cc., the packed erythrocyte volume was 46 cc. per 100 cc., and the

*Solutions of sodium chloride are prepared in increments of 0.05 per cent between 0.10 per cent and 0.75 per cent saline. These are kept in sterile rubber-stopped bottles. At the time of testing, approximately 1.0 cc. is withdrawn with a syringe from each bottle and placed in Wassermann tubes. One to two drops of capillary blood from the finger or toe is then mixed with the contents of each tube. The results may be noted after one hour, but the tubes are let stand for 12 to 24 hours and the results noted again. Simultaneous testing on a normal control must be done each time. The significance of the result is not the exact concentration of saline at which hemolysis begins or is completed, but the relation of hemolysis of the blood being tested to that in the blood known to be normal. By this method hemolysis in the normal subject starts in 0.45 per cent sodium chloride and is complete in 0.35 per cent or 0.30 per cent, while in Mediterranean anemia hemolysis may not be complete in 0.20 per cent saline.

TABLE 1.—*The Major and Minor Forms of Mediterranean Anemia Compared*

	Major	Minor: Similarity to Major	Minor: Points of Difference
Anemia	++++		0 to +
Systemic involvement	++++		0
Roentgenographic changes	++ to ++++		0
Blood:			
Anemia	Hypochromic microcytic anemia	Hypochromic microcytic but without anemia (Normal hemoglobin, high erythrocyte count)	
Anisocytosis	++++	++	
Poikilocytosis	++++	++	
Basophilic stippling	++	++	
Target cells	+++	++	
Nucleated erythrocytes	+++		0
Reticulocytes	Increased	Increased	
Erythrocyte fragility	Decreased	Decreased	
Leukocytosis	++		0
Bone marrow	Erythroblastosis	Erythroblastosis	

TABLE 2.—*Mediterranean and Iron Deficiency Anemia Compared*

	Mediterranean Anemia	Iron Deficiency Anemia: Similarity to Med. Anemia	Iron Deficiency Anemia: Points of Difference
Signs and Symptoms:			
Anemia	++++	+ to ++++	
Systemic involvement	++++	0 to ++	
Roentgenographic changes	+ to ++++		0
Blood:			
Anemia	Hypochromic microcytic	Hypochromic microcytic	
Anisocytosis	++++	+++	
Poikilocytosis	++++	+++	
Basophilic stippling	++		0
Target cells	+++		0
Nucleated erythrocytes	+++	0 to ++	
Reticulocytes	Increased		Normal or decreased
Erythrocyte fragility	Decreased		Normal or slightly decreased
Leukocytosis	++		0
Bone marrow	Erythroblastosis	Erythroblastosis	
Response to iron	0		++++

erythrocytes numbered 7,520,000 per cubic millimeter.) Anisocytosis, poikilocytosis, basophilic stippling, target cells, and decreased fragility of erythrocytes in hypotonic saline solution all may be present even though the hemoglobin content be normal.

At times the differentiation of Mediterranean anemia from other kinds of hypochromic microcytic anemia may be difficult. It has been stated[30] that the only two causes of hypochromic microcytic anemia in human beings are Mediterranean anemia and iron deficiency anemia. In childhood the latter include deficiencies due to faulty diet, disorders of the alimentary tract (chronic diarrhea, celiac syndrome and hookworm infestation), and chronic loss of blood. Occasionally infections appear to be instrumental in producing hypochromic microcytic anemia, and this, too, may be due to iron deficiency, since infection interferes with the normal utilization of iron. In both Mediterranean anemia and severe iron deficiency anemia of childhood, there may be anisocytosis, poikilocytosis, nucleated erythrocytes in the peripheral blood, and decreased fragility of erythrocytes in hypotonic saline solution (see Table 2). Erythroblastosis in the bone marrow takes place in both diseases. However, in Mediterranean anemia target cells, basophilic stippling of the erythrocytes, reticulocytosis, and the presence of abnormality of the blood of other members of the family will help to differentiate the condition from iron deficiency anemia.

The only effective treatment of the severe form of Mediterranean anemia is periodic transfusions of whole blood. These should be given before the anemia becomes so severe as to result in pronounced fatigue, shortness of breath, and cardiac failure. Splenectomy, liver by mouth and by injection, iron by mouth and by injection, B_{12} by mouth and by injection, copper, pentanucleotides, and other hematinics all have been found to be of no value. The mild form of Mediterranean anemia usually is not incompatible with normal life, and specific treatment is not necessary.

REFERENCES

1. Bywaters, E. G. L.: The Cooley syndrome in an English child, Arch. Dis. Childhood, 13:173-187, June 1938.

2. Caselli, E. G. and Sribman, I.: Anemia eritroblástica de Cooley (con presentación de un caso) reseña histórica y literatura pediátrica Argentina, Arch. argent. de pediat., 24: 187-196, Sept. 1945.

3. Chaudhuri, K. C.: Erythroblastic anemia of Cooley, Indian J. Pediat., 14:76-80, April 1947.

4. Coelho, G., cited by Chaudhuri: Erythroblastic anemia of Cooley, Indian J. Pediat., 14:76-80, April 1947.

5. Cooley, T. B. and Lee, P.: A series of cases of splenomegaly in children with anemia and peculiar bone changes, J. Dis. Child., 30:447, Sept. 1925.

6. Dameshek, W.: Familial Mediterranean target-oval cell syndromes, Am. J. M. Sc., 205:643-660, May 1943.

7. Dhayagude, R. G.: Erythroblastic anemia of Cooley (familial erythroblastic anemia) in an Indian boy, Am. J. Dis. Child., 67:290-293, April 1944.

8. Diwani, M.: Erythroblastic anæmia with bone changes in Egyptian children: Possible Cooley's type, Arch. Dis. Childhood, 19:163-168, Dec. 1944.

9. Faber, H. K. and Roth, B. M.: Mediterranean anemia (Cooley) in a negro girl, J. Pediat., 28:610-612, May 1946.

10. Foster, L. P.: Cooley's syndrome (erythroblastic anemia) in a Chinese child, Am. J. Dis. Child., 59:828-834, April 1940.

11. Freudenberg, E. and Esser, M.: Zur pathogenese der Cooley-anæmie, Ann. pædiat., 158:128-166, 1942.

12. Gardner, L. B.: Cooley's erythroblastic anemia in two Chinese boys, J. Pediat., 31:347-354, Sept. 1947.

13. Greenblatt, I. J., Cohn, T. D. and Deutsch, H. L.: Mediterranean target-oval cell syndrome in an adult Chinese male: Report of a case, Ann. Int. Med., 24:259-261, Feb. 1946.

14. Jaso, E., Alés Reinlein, J. M. and Pardo Urdapilleta, J.: El primer caso español de anemia de Cooley, Rev. Clin. Españ., 4:425-429, March 30, 1942.

15. Lubitz, J. M.: Target cells and other abnormalities of red cells in presence of normal erythrocyte count and hemoglobin content, Am. J. Clin. Path., 15:305-311, Aug. 1945.

16. Malhotra, R. P. and Chhuttani, P. N.: A case of Cooley's anemia, Indian M. Gaz., 79:198-199, May 1944.

17. Mukherji, M.: Cooley's anemia (erythroblastic or Mediterranean anemia), Indian J. Pediat., 5:1-7, Jan. 1938.

18. Napier, L. E., Shorten, J. A. and Das Gupta, C. R.: Cooley's erythroblastic anæmia, Indian M. Gaz., 74:660-664, Nov. 1939.

19. Neel, J. V. and Valentine, W. A.: The frequency of thalassemia, Am. J. M. Sc., 209:568, 1945.

20. Olmer, J. and Sarles, H.: Remarques cliniques et etiologiques sur une erythroblastose de l'adulte, Bull. et Mém. Soc. Méd. d. Hôp. de Paris, 61:293-294, 1945.

21. Patel, N. D. and Bhende, Y. M.: Erythroblastic anemia with kyphosis and cirrhosis of liver, Indian J. Pediat., 6:217-222, Oct. 1939.

22. Saracoglu, K.: Cooleysche anämie in der Türkei, Wien. Med. Wchnschr., 93:217-221, March 30, 1943.

23. Schwartz, S. O. and Mason, J.: Mediterranean anemia in the negro: A report of four cases and their families, Blood, 4:706-721, June 1949.

24. Scott, A. V.: Cooley's anemia (Mediterranean anemia) in a Chinese child, Chinese M. J., 65:77-84, March-April 1947.

25. Sendrail, M., Lyon, A. and Lasserre, J.: Infantilisme splenique de type Cooley, Bull. et. Mém. Soc. Méd. d. Hôp. de Paris, 52:902-905, June 8, 1936.

26. Silver, H. K.: Mediterranean anemia in children of non-Mediterranean ancestry, Am. J. Dis. Child., 80:767-778, Nov. 1950.

27. Slaten, E. F.: Familial erythroblastic anemia (Cooley's anemia): Report of possible cases in two Filipino brothers, Hawaii M. J., 7:210-213, Jan. 1948.

28. Stiles, M. H., Marlove, C. H. and Dangerfield, C. D.: Mediterranean anemia: Report of a case in a negro, Northwest Med., 45:23-27, Jan. 1946.

29. Wang, C. Y. and Khoo, F. Y.: Hemolytic anemia with erythroblastæmia: Report of three cases seen in Chinese infants, Chinese M. J., 58:177-192, Aug. 1940.

30. Wintrobe, M. M.: Clinical Hematology, ed. 2, Philadelphia, Lea & Febiger, 1946.

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EDITORIALS

Public Relations at Home

Latest move in the public relations program of the California Medical Association is the offer just made to all C.M.A. members to supply them with a plaque to hang on the office wall or place on a desk or table. The plaque is addressed "To All My Patients" and carries the doctor's message that he invites the patients to discuss with him all matters pertaining to his services or his fees.

Designed by the American Medical Association as a public relations builder, the plaque is attractively made up and equipped with a back which becomes either an easel or a hook hanger. The A.M.A. has been offering it for sale at one dollar but the C.M.A. is underwriting this cost for its members in order to foster a good public relations medium.

Before making this offering, the C.M.A. public relations department made a trial run with the A.M.A. plaque. Samples were sent out to members in ten counties, with the request that they put them to use and let the Association know what reactions developed. Several weeks after these samples had been issued, a check was made to see if the plaques were in use and what sort of comments they had evoked. Results in the great majority of instances were that the plaque was in use and that doctors, nurses, secretaries and patients liked the idea.

While this opinion was not unanimous, it was found in so many cases that the larger distribution was voted. In the few cases in which the plaque was not in use, the reason most often given for not displaying it was that the practices in the office were already so nearly in line with the suggestions on the plaque that the printed message was not considered necessary. In a pleasingly small number of cases the sample plaque was not in use simply because the physician or secretary just hadn't taken the trouble to look it over and put it up.

The old adage that public relations begins at home, and the thesis that the public relations of the medical profession is actually the sum total of the public relations of each physician with his own patients, take on added meaning with this new item. It is evident that with patients, doctors, nurses and secretaries accepting this plaque in its true spirit, the true meaning of public relations will be subconsciously brought home to each. Just seeing the plaque on the wall or the desk each day is enough to remind any of these persons of his own responsibilities.

Here is a demonstration of a simple mechanism with far-reaching results. It should gain widespread acceptance.

Madera County Medical Society

Welcoming the Madera County Medical Society into the official family of the California Medical Association is a distinct pleasure. Here, for the first time, the physicians of that county have an organization of their own, to serve as a spokesman and a protector of the public health and the ethical practice of medicine.

Fifteen physicians, formerly affiliated with county societies in Fresno and Merced counties, have become charter members of the newest addition to the C.M.A. family. Their petition to the House of Delegates for a charter was promptly acted upon as an expression of home-town rule in the best tradition and in accordance with the wishes of those directly involved.

May this society prosper and take its rightful place alongside its sisters in California.

CALIFORNIA MEDICAL ASSOCIATION

H. GORDON MacLEAN, M.D. ..... President
LEWIS A. ALESEN, M.D. ..... President-Elect
DONALD A. CHARNOCK, M.D. ..... Speaker
HENRY A. RANDEL, M.D. ..... Vice-Speaker
SIDNEY J. SHIPMAN, M.D. ..... Council Chairman
ALBERT C. DANIELS, M.D. ..... Secretary-Treasurer
DONALD D. LUM, M.D. ..... Chairman, Executive Committee
DWIGHT L. WILBUR, M.D. ..... Editor
JOHN HUNTON, Executive Secretary ..... General Office, 450 Sutter Street, San Francisco 8
ED CLANCY, Director of Public Relations ..... Southern California Office, 417 South Hill Street, Los Angeles 13, Phone: MAdison 8863

NOTICES AND REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 387th Meeting of the Council of the California Medical Association, Los Angeles, December 1-2, 1951.

The meeting was called to order by Chairman Shipman in Conference Room 4 of the Biltmore Hotel, Los Angeles, on Saturday, December 1, 1951, at 1:45 p.m., recessed at 2:30 p.m. and reconvened on Sunday, December 2, 1951, in the same location at 1:00 p.m.

Roll Call:

Present were President MacLean, President-elect Alesen, Speaker Charnock, Vice-Speaker Randel, Secretary Daniels, Editor Wilbur and Councilors West, Ball, Loos, Sampson, Morrison, Dau, Ray, Montgomery, Lum, Pollock, Frees, Thompson, Shipman, Bailey and Varden.

A quorum present and acting.

Absent for cause, Councilors Green and Heron.

Present by invitation: Drs. William L. Bender, Eugene Hoffman and Elmer E. Wadsworth; Executive Secretary Hunton, Assistant Executive Secretary Thomas, Legal Counsel Hassard, Executive Secretary of the Public Health League of California, Ben H. Read; Public Relations Director and associate Clancy and Gillette, and William T. Nute, executive secretary of the San Diego County Medical Society.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 386th Council meeting, held November 11, 1951, were approved.

2. *Membership:*

(a) On motion duly made and seconded, in each instance, Associate Membership was voted for: Edmund D. Jung, San Francisco County; Thomas L. Nelson, Sonoma County.

(b) On motion duly made and seconded in each instance, Retired Membership was voted for: Clinton D. Hubbard, Los Angeles County; Elmer H. Johnson, Los Angeles County.

(c) On motion duly made and seconded, a reduction of dues, because of protracted illness, was voted for John E. Skaff, M.D., San Francisco County.

3. *C.P.S. Study Committee:*

On motion duly made and seconded, an appropriation of not to exceed $40,000 was voted by a three-fourths majority for the use of the C.P.S. Study Committee for employment of outside assistance in carrying out its activities.

4. *Selective Service:*

Dr. William L. Bender, Northern California consultant to Selective Service, reported on the activities of that service and of the advisory committees to Selective Service in the Association and the component societies. He reported a high degree of cooperation received from the Army, Navy and Air Force.

5. *Other Professions:*

Discussion was held on the activities of other professional groups and it was regularly moved, seconded and voted that a committee be appointed to confer with such groups on matters of mutual interest.

6. *California Physicians' Service:*

On motion duly made and seconded, it was voted that a copy of the address made before the House of Delegates of California Physicians' Service by Mr. Ransome Cook be sent to all members of the House of Delegates.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 3:05 p.m., December 2, 1951, subject to call for a later meeting by the Chairman.

SIDNEY J. SHIPMAN, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

Executive Committee Minutes

Tentative Draft: Minutes of the 229th Meeting of the Executive Committee of the California Medical Association, San Francisco, October 25, 1951.

The meeting was called to order by Chairman Lum in the offices of the Association at 2:15 p.m., Thursday, October 25, 1951.

Roll Call:

Present were President MacLean, President-elect Alesen, Council Chairman Shipman, Auditing Committee Chairman Lum and Secretary-Treasurer Daniels.

Absent for cause was Speaker Charnock.

Present by invitation were Executive Secretary Hunton, Assistant Executive Secretary Thomas, Legal Counsel Hassard and Director of Public Relations Clancy.

1. *Public Relations:*

Discussion was held on public relations aspect of Dr. Alesen's speech which he is giving before various county medical societies and several changes were suggested.

Ads prepared by the public relations staff were distributed.

2. *Complete Service Bureau, San Diego:*

Mr. Hassard reported that the brief on the case in San Diego has been completed and filed with the court.

3. *C.P.S. Study Committee:*

Mr. Hassard reported in behalf of Dr. Wilbur Bailey, chairman of the C.P.S. Study Committee. Discussion followed and motion was duly made, seconded and carried that the C.M.A. pay the expenses of the first meeting of the committee and that the committee be considered to be a special committee of the Council and that it be responsible thereto. The advisability of the committee employing a business consultant was discussed.

4. *C.M.A. Committee on Psychology:*

On motion duly made and seconded, it was voted to appoint Dr. Donald Charnock chairman of this committee and to appoint Drs. John Askey and Theodore Rothman as members.

5. *Industrial Accident Commission Committee:*

On motion duly made and seconded, it was voted to appoint Dr. William Sumner to the committee to replace Dr. Roger Barnes, resigned.

6. *Advisor to the University of California Chapter of the Student A.M.A.*

On motion duly made and seconded, it was voted to appoint Dr. James Harkness to be C.M.A. representative on the advisory committee to the University of California chapter of the Student A.M.A., replacing Dr. William Donald, resigned.

7. *Board of Vocational Nurse Examiners:*

On motion duly made and seconded, it was voted to recommend the following persons to the Director of the Department of Professional and Vocational Standards for selection of one for appointment to the Board of Vocational Nurse Examiners: Drs. Dwight L. Wilbur, Howard Naffziger, and Arthur A. Kirchner.

8. *U. S. Treasury Department:*

On motion duly made and seconded, it was voted to decline the request of the Treasury Department for use of the C.M.A. mailing list, and to offer the department a page in CALIFORNIA MEDICINE for purposes of advertising U. S. Defense Bonds.

9. *Woman's Auxiliary to the California Medical Association:*

On motion duly made and seconded, it was voted to refer the letter from Mrs. Stanley R. Truman, president, Woman's Auxiliary, to President MacLean, Director of Public Relations Clancy and to the Committee on Public Policy and Legislation.

10. *Cancer Clinics:*

On motion duly made and seconded, it was voted to refer to the C.M.A. Cancer Commission the request of Dr. James Ellis, cancer consultant, State Department of Public Health, for the establishment of standards for cancer clinics.

11. *House of Delegates Resolution No. 16—C.M.A. Educational Fund:*

On motion duly made and seconded, it was voted to refer this resolution to the Council with the recommendation that the C.M.A. accept any contribution to medical education and forward same to the American Medical Education Foundation, and that a page in CALIFORNIA MEDICINE and a section of *Rx Reading* be devoted to advising the membership of this.

12. *Physician-Owned Pharmacies:*

Mr. Hassard reported on an article appearing in the June 1951 issue of *Northern California Drug News* regarding physician-owned pharmacies.

13. *New Building—San Francisco Medical Society.*

On motion duly made and seconded, it was voted to advise each member of the Council, by letter, of the request of Dr. Francis Quinn, Building Committee, San Francisco Medical Society, and to refer the matter to the Council at its next meeting.

15. *Los Angeles Tumor Registry:*

On motion duly made and seconded, it was voted to approve the request of the Cancer Commission to change the name of the Los Angeles Tumor Regis-

try to "Tumor Tissue Registry, Cancer Commission, California Medical Association."

16. *C.M.A.-C.P.S. Liaison Committee:*

On motion duly made and seconded, it was voted to approve the report of this committee on the negotiations with the Sailors Union, subject to the approval of the Council.

Adjournment:

There being no further business, the meeting was adjourned at 5:15 p.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

BENNETT, MABEL C. Died in Berkeley, January 21, 1952, aged 63, of cerebral vascular thrombosis due to arteriosclerosis and hypertension. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1920. Licensed in California in 1920. Dr. Bennett was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

GILBERT, BERNARD H. Died in San Jose, January 23, 1952, aged 66. Graduate of the University of Vermont College of Medicine, Burlington, 1913. Licensed in California in 1923. Dr. Gilbert was a member of the Santa Clara County Medical Society, the California Medical Association, and the American Medical Association.

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HOARE, HARRY J. Died in Los Angeles, January 28, 1952, aged 68. Graduate of the College of Physicians and Surgeons, Los Angeles, 1910. Licensed in California in 1910. Dr. Hoare was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

MAY, H. CAMERON. Died in Los Angeles, January 29, 1952, aged 69. Graduate of Hahnemann Medical College of the Pacific, San Francisco, 1908. Licensed in California in 1908. Dr. May was a retired member of the Los Angeles County Medical Association, and the California Medical Association.

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MERKLE, HENRY J. Died in Los Angeles, December 17, 1951, aged 54. Graduate of Northwestern University Medical School, Chicago, 1925. Licensed in California in 1927. Dr. Merkle was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

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PASLEY, HARRY W. Died in Reedley, January 7, 1952, aged 67, of coronary artery disease. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1909. Licensed in California in 1922. Dr. Pasley was a member of the Fresno County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

POTTER, WILLIAM H. Died in La Mesa, December 28, 1951, aged 82. Graduate of the University of Buffalo School of Medicine, New York, 1897. Licensed in California in 1919. Dr. Potter was a retired member of the San Diego County Medical Society, the California Medical Association, and an Associate Fellow of the American Medical Association.

✤

WILKE, JULIAN O. Died in Covina, January 15, 1952, aged 57, of coronary occlusion. Graduate of Johns Hopkins University School of Medicine, Baltimore, 1922. Licensed in California in 1923. Dr. Wilke was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Questions and Answers about C. P. S.

Question: Under the new C.P.S. medical contract, are the $25 and $10 allowances for x-ray and laboratory services renewed each year? If so, how can the physician know the date when a C.P.S. patient's allowances are renewed?

Answer: Yes, these allowances are renewed each contract year. (A "contract year" covers one year from the effective date of the member's enrollment in C.P.S. under the new medical contract, or one year from the date the member's coverage was converted from the old to the new medical contract.)

The following procedure has been established so that physicians will know the status of a C.P.S. patient's x-ray and laboratory allowances: When a physician member who performs these services in his own office submits his bill to C.P.S., he is automatically sent a form which indicates (1) the amount which will be paid by C.P.S., (2) the amount of the $25 and $10 allowances which remains, and (3) the date when the allowances will be renewed.

Question: I have two questions regarding exclusions from coverage under the Direct Payment Program: (a) Are tonsillectomy and adenoidectomy and pregnancy excluded? (b) Have athletic and occupational injuries recently been removed from the list of exclusions?

Answer: (a) Benefits for tonsillectomy and adenoidectomy are immediately excluded when a C.P.S. member transfers from group membership to the direct payment program. (Code number shown on identification card is "OCC ——.") Benefits for pregnancy which may have been held under group membership (except surgical services for ectopic pregnancy and repair of conditions arising from prior pregnancy) are excluded nine months after transfer from group to direct payment membership.

(b) Yes, athletic injuries and occupational injuries not covered by Workmen's Compensation were recently removed from the list of exclusions under the direct payment program.

Question: How many persons must be enrolled on a contract in order to apply for the C.P.S. provisions of $50 for hospitalization for childbirth and $50 for professional services for maternity?

Answer: The $50 allowance for hospitalization for childbirth applies when *two or more persons* are enrolled on the *same* contract—but not when they are enrolled on separate contracts, as when a husband and wife are enrolled in separate C.P.S. groups. The $50 allowance toward the cost of professional services for maternity applies whether or not any other persons are enrolled on the expectant mother's two-visit-deductible contract.

In both instances, the member must have met the requirements of her waiting period before she is eligible for these benefits.

Question: Are preexisting conditions covered under the new statewide Individual Family Plan contract? (Code on identification card is "064—".)

Answer: Under this contract, all preexisting conditions are excluded for the first year of membership. The decision as to the preexistence of a condition is based on generally accepted medical knowledge and experience—not on the member's awareness of symptoms of the ailment.

After one year's membership, preexisting conditions are covered in accordance with terms of the contract, except for any condition(s) which may have been waived at time of joining.

Question: Are veterans of the Korean War eligible for out-patient medical care under the Home Town Care Program?

Answer: Confusion regarding the eligibility of Korean War veterans stems from the fact that the United States has not made a formal declaration of war, and because disabilities incurred in peacetime enlistments in the Armed Forces are not handled by the Veterans Administration in the same manner as service-connected disabilities received in time of war.

To rectify the situation, the 82nd Congress passed Public Law 170, which provides that disabilities occurring on or after June 27, 1950 (date of the start of the Korean War), shall be considered the same as service-connected disabilities incurred in time of war. Thus, Korean War veterans are eligible for the same benefits provided for World War I or World War II veterans under the Home Town Care Program.

Question: What is the procedure for obtaining drug prescriptions under the Veterans Program?

Answer: The prescription should be written on California Pharmaceutical Association-Veterans Administration prescription blanks (available from any member pharmacy participating in the program) and should be for an amount not exceeding what is needed for one month's treatment. The prescription should be given to the veteran patient, who will have it filled at a pharmacy handling VA prescriptions. The physician should see that the prescription is used only for treatment of the veteran concerned, and that it is for the service-connected disability currently under authorized treatment.

NEWS and NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

At a recent meeting of the **Los Angeles Society for Allergy**, the following officers were elected: President, Dr. Norman Shure, Los Angeles; vice-president, Dr. Elizabeth A. Sirmay, Beverly Hills; secretary-treasurer, Dr. Ben C. Eisenberg.

* * *

The Metropolitan Dermatological Society of Los Angeles has elected the following officers for the year 1952: President, Dr. Harold C. Fishman; vice-president, Dr. Stanton B. May, Glendale; secretary, Dr. Fred F. Feldman, Los Angeles.

* * *

At the annual meeting of the American College of Radiology, held last month in Chicago, **Dr. Wilbur Bailey,** Los Angeles, was elected Chancellor to the college, and **Dr. John D. Camp,** Los Angeles, was reelected chairman of the Board of Chancellors.

SACRAMENTO

The second annual session of the **Sacramento Valley Counties Regional Medical and Surgical Institute** will be held in Sacramento, April 3 and 4, 1952, at the Eastern Star Temple, 2719 Kay Street between 27th and 28th streets. Local arrangements are under the direction of Dr. Herbert W. Jenkins, regional chairman, and his committee: Drs. J. W. Rovane, Orland Wiseman, A. E. Berman, E. William Rector, and Max L. Dimick, all of Sacramento; J. D. Baker, Stockton; Max Dunievitz, Auburn; Louis C. Olker, Chico; O. C. Railsback, Woodland; J. W. Linstrum, Marysville; and L. W. Bonar, Redding. The teaching program has been arranged in cooperation with Dr. H. M. Walton, chairman of the Committee on Graduate and Postgraduate Medical Education, College of Medical Evangelists, Los Angeles. The program follows:

Thursday, April 3

Morning Session

Chairman, Milton Sarkisian, M.D., Sacramento

8:30- 9:00 a.m.—Registration.

9:00-10:00 a.m.—Pathologic Physiology as a Basis for Medical Practice, Walter E. MacPherson, M.D.

10:00-11:00 a.m.—Advances and Practical Aspects of Hematology, G. Gordon Hadley, M.D.

11:00-11:15 a.m.—Intermission.

11:15-12:15 p.m.—Management of Coronary Artery Disease, William P. Thompson, M.D.

12:30- 2:00 p.m.—Luncheon and Round Table Discussion.

Afternoon Session

Chairman O. J. Hansen, M.D., Redding

2:00- 3:00 p.m.—Surgical Types of Congenital Heart Disease, William P. Thompson, M.D.

3:00- 4:00 p.m.—Use, Abuse and Limitations of Clinical Laboratory Procedures, G. Gordon Hadley, M.D.

4:00- 4:15 p.m.—Intermission.

4:15- 5:15 p.m.—Management of Lower Nephron Nephrosis, Walter E. MacPherson, M.D.

7:00- 9:00 p.m.—Dinner. Speaker: Louis J. Regan, M.D., LL.B., Avoiding Medico-Legal Pitfalls.

Friday, April 4

Morning Session

Chairman, C. M. Guernsey, M.D., Chico

9:00-10:00 a.m.—Office Diagnostic Procedures in Urology, Roger W. Barnes, M.D.

10:00-11:00 a.m.—Diagnosis and Management of Poliomyelitis, Albert G. Bower, M.D.

11:00-11:15 a.m.—Intermission.

11:15-12:15 p.m.—Differential Diagnosis of the Acute Abdomen, John R. Paxton, M.D.

12:00- 2:00 p.m.—Luncheon and Round Table Discussion.

Afternoon Session

Chairman, Don C. Harrington, M.D., Stockton

2:00- 3:00 p.m.—Urethral and Bladder Diseases in Women, Roger W. Barnes, M.D.

3:00- 4:00 p.m.—Clinical Diagnosis and Pathological Physiology of Carcinoma of the Colon, John R. Paxton, M.D.

4:00- 4:15 p.m.—Intermission.

4:15- 5:15 p.m.—Diagnosis and Management of Contagious Diseases, Albert G. Bower, M.D.

SAN FRANCISCO

The 1952 annual meeting of the **California Tuberculosis and Health Association,** the **California Trudeau Society** and the **California Conference of Tuberculosis Secretaries** will be held in San Francisco, April 3 to 5. All meetings of the public health and medical sections will be held at the St. Francis Hotel. Dr. John Gompertz, Oakland, is general chairman of the program committee.

SAN JOAQUIN

Dr. C. A. Broaddus of Stockton, Director of Postgraduate Activities for the California Medical Association, was elected secretary of the Associated States Postgraduate Committees of the State Medical Societies at the recent annual meeting of that organization in Chicago. As a guest speaker at the meeting, Dr. Broaddus presented a review of the postgraduate activities of the various state medical societies from 1915 to the present.

POSTGRADUATE EDUCATION NOTICES

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Clinical Ophthalmology:

March 24 through March 28, 1952.

Fee: $75.

Contact: Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15.

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE

Psychosomatic Medicine:

March 17 through 21 at the Langley Porter Clinic.

Fee: $50.

Cardiovascular Diseases (mornings), Electrocardiography (afternoons):

April 28 through May 3 at the Medical Center.

Contact: Stacy R. Mettier, M.D., Head Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Essential Physics in Radiology:

March 10, 1952, to May 26, 1952.

The University of Southern California Medical Extension Education is presenting a course in the Essential Physics in Radiology to be given from March 10, 1952, to May 26, 1952. This course will be offered every Monday evening from 8:00 to 10:00 p.m.; the first six lectures to be presented at the Los Angeles County Hospital and the last six at the Cedars of Lebanon Hospital. Fee for the course, $50. For further information please contact the University of Southern California Medical Extension Education office at 1200 North State Street, Barracks Building "A," Room 102, Los Angeles 33.

GENERAL

The fifth **American Congress on Obstetrics and Gynecology** sponsored by the American Committee on Maternal Welfare, is to be held March 31 to April 4 in Cincinnati at the Netherland-Plaza Hotel. In addition to a comprehensive medical program, there will be papers on nursing and public health, and a special session on sociological factors. The latest developments on proposed legislation for Emergency Medical and Infant Care will be presented by Joseph Lawrence, M.D., director of the American Medical Association's Washington office.

* * *

C.P.S. is now issuing slightly revised membership cards in order to standardize them and to eliminate the necessity of providing separate cards to show additional coverages. The new cards will be issued to all new members, and a reissue will be made to all present members having extended benefits coverage. Present members who do not have extended benefits will retain the cards they now hold. The principal difference in the revised card is that it has an additional square (labeled "other") for the insertion of code numbers to indicate the type of supplementary coverage —*i.e.*, catastrophic coverage and/or extended benefits— which the member may hold. Another change provides a small space after the member's number (labeled "end") to indicate that waiver(s) may apply to the contract. If an "X" appears in this space information concerning limitations should be obtained from the members or from the C.P.S. Medical Department.

A two-year contest, with cash prizes for the two best theses on **research on the so-called "toxemias of pregnancy,"** has been announced by the American Committee on Maternal Welfare, Inc. The contest is open to students and personnel in the health professions who are not of higher academic rank than instructor, or who are of junior rank on the hospital or other staff with which they are connected. Theses must be based upon original work done by the authors and must be submitted no later than January 1, 1954. First and second prizes of $500 and $250, respectively, will be awarded later in 1954.

* * *

The annual meeting of the **American College of Allergists** will be held this year at the William Penn Hotel in Pittsburgh, Pennsylvania, on April 7, 8 and 9. In addition to twenty addresses on general topics and special scientific investigations, there will be round tables at luncheons and sectional meetings devoted exclusively to psychosomatic aspects, to allergic disease in infants and children, and to allergic manifestations in the skin, eye, ear, nose and throat. A session will be devoted to the problems of allergic disease in modern industrial medicine.

Immediately before the annual meeting—on April 4, 5 and 6—the college will offer an **instruction course in allergy,** also in Pittsburgh. The program has been designed for physicians in other fields, especially those in general practice, that they may learn to recognize and manage the allergic component in the complaints of patients. Further information may be obtained from the American College of Allergists, LaSalle Medical Building, Minneapolis 2, Minnesota.

INFORMATION

Changes in Disability Benefits

The California Legislature last year made substantial changes in the act which provides benefits to covered claimants suffering a disability as the result of a non-occupational illness or injury. Since these claimants receive such benefits only through certification by doctors, it seems wise to review the changes which are effective at this time.

1. *Increase in the Weekly Benefit Amount for Disability:* The program started in 1946 with a $20 a week maximum for 23 weeks; later, it was modified to a $25 maximum for 26 weeks. Now, the maximum is $30 a week for 26 weeks. The fact that the disabled unemployed covered worker may receive $30 per week as contrasted with a maximum of only $25 for those who are able to work and yet are unemployed, conceivably might cause some persons to seek certification of a disability from a physician just because of the differential rather than because of a true disability. Of course, honest medical certification, just as in the past, will eliminate this added hazard.

2. *Claimant May Receive Disability Benefits on Top of Part of Regular Wages Up to a Maximum (Partial Wages Plus Disability Benefits) of 70 Per Cent of His Regular Wage:* Previously, if a claimant received as much as $25 a week in wages while he was sick or injured, he could not be paid any disability insurance. Now, if he is unable to work because of illness or injury, he may be paid benefits even if he is receiving part of his wages. However, the wages he receives, plus the disability insurance paid him, cannot exceed 70 per cent of his normal pay.

3. *Hospital Benefits Now Paid Claimant Irrespective of Receipt of Regular Wages:* Even though an employer continues to pay a claimant his regular wages, the claimant may receive, "in addition to all benefits otherwise provided in the act," $8 for each day not in excess of 12 days in any benefit year during his confinement in a hospital—if confined therein pursuant to orders of his physician. The claimant is not subject to any waiting period requirement if and when his disability requires hospitalization. (If hospitalization is not required, there is a waiting period of one week.)

4. *Hospital Benefit of $8 Per Day Paid If Hospital Charges Full Daily Rate:* The law previously denied a claimant his daily hospital benefit if he was confined in the hospital less than 24 hours even though he were charged a full daily rate by the hospital. The changed law provides for the payment of the $8 for each 24-hour period of hospitalization and, in addition, for any period of less than 24 hours for which an individual is charged the full daily rate.

5. *Assignment of Hospital Benefits:* Up to now, the Department of Employment could only pay benefits directly to a claimant. It is now allowed to make checks directly to hospital facilities if the claimant assigns his hospital benefits to a hospital.

6. *Hospital Benefits Not Allowable If Claimant's Hospitalization Is Furnished Under Workmen's Compensation Law or an Employer's Liability Law:* Payment of hospital benefits has been eliminated in those instances where hospital care is being furnished at no cost to the claimant because the hospital cost is covered under the Workmen's Compensation Law or an employer's liability law of this state or of any other state or of the federal government.

7. *Those Believing in Healing by Prayer or by Other Spiritual Means May Exempt Themselves from Contribution:* It was apparent that there was some unfairness in a law which compelled a person to contribute to a specific fund from which he would not be likely to draw benefits because of certain religious beliefs. Now, if such a person files a certification with his employer and the Department of Employment requesting an exemption from contribution, he is exempted from paying it.

8. *Benefits May Be Paid Claimant in Certain Instances Despite His Absence from Employment Because of a Trade Dispute:* Heretofore, if a claimant had left work primarily because of a trade dispute, he was ineligible to receive any disability benefits. Now, the law has been modified and provides for the payment of disability benefits to individuals when the proximate cause of wage loss is not directly attributable to the existence of a trade dispute. In other words, if the claimant's disability would have occurred and would have prevented him from continuing his work if the trade dispute had not occurred, if it was the result of an accident or required a period of hospitalization—if it was *not* caused by and did not arise out of the trade dispute—such claimant may receive disability benefits as otherwise provided by the act.

It should be pointed out that no change was made in the portion of the law controlling disabilities related to pregnancy. Although a number of proposals for changes were made, none was adopted. It is not considered a "disability" under the act if it is "caused by" or "arises in connection with" pregnancy unless the disability persists longer than four weeks after the termination of the pregnancy.

It is of interest to note that at present the number of workers covered is about equally distributed between private voluntary plans (either self insured or insurance companies) and the State Disability Fund. Furthermore, present estimates indicate that, out of every dollar paid for this insurance coverage by the workers, about 52 cents goes to private insurers and about 48 cents is paid into the state fund.

BOOK REVIEWS

DISEASES OF THE EAR, NOSE, AND THROAT—A Textbook of Clinical and Laboratory Procedures—Georges Portmann, M.D., Professor of Otorhinolaryngology at the University of Bordeaux; Surgeon at the Hospital of Tondu, Bordeaux; Surgeon at the Hospital Leopold Bellan, Paris; translated by Fernand Montreuil, M.D., and Jules G. Waltner, M.D., College of Physicians and Surgeons, Columbia University, New York. The Williams and Wilkins Company, Baltimore, 1951. 728 pages. $20.00.

The name Georges Portmann, M.D., is well known to all otolaryngologists. It is hoped that his text, Diseases of the Ear, Nose, and Throat, will be equally well known. The volume is a veritable storehouse of information. As a textbook, it is by far the most worthwhile and usable one that has been made available in several years. It should be considered as a necessary volume in the library of all otolaryngologists. Furthermore, it should be kept handy and available so that it will be read and reread as time and necessity permit or demand.

These statements are made with the full realization that there are parts of both the contents and context that offer themselves for question and argument. Some areas demand direct criticism. The seven-page introduction would have been excellent if it had stopped at the first half of page one. The remaining six and one-half pages devoted to ways and means of obtaining external illumination add nothing to the knowledge of those who are familiar with a head mirror and supply nothing of value for those who might wish to pursue this speciality. For those orderly-minded readers, who habitually start at page one and diligently carry on through to the last page, this introduction could easily prove to be a deterring factor. It is unfortunate that such an excellent volume should have such poor introduction.

The chapters on anatomy of the various organs are excellent. Unfortunately, as much cannot be said for some of the illustrations. A number of them are time-worn ones that have appeared in practically every volume of anatomy or textbook on this subject that has been presented during the last half-century. It is unfortunate that so many of the better anatomical illustrations were printed with their original French nomenclature. In a number of instances, the reader has to refer to the following page to find a supplemental translation. A number of the illustrations could have been deleted without detracting, in any way, from the advantages of visual education. Specifically, Figure 458, a rather poor drawing, depicting a bare, naked trachea, is devoid of all labeling, other than a major caption. In many instances, the subject matter selected for presentation in color is not good. The reproductions of the color illustrations are not good according to our present standards.

The chapters on physiology are entirely too short. Such material as is presented is well chosen, well selected, and is presented in a clear manner. Further elaboration on the applied physiology would add much to the interest factor as well as direct attention to the importance of obtaining and maintaining normal function.

Much time and space have been devoted to the reproduction of roentgenograms. A number of these films have lost so much in reproduction that the ultimate product does not present, to even the trained eye, sufficient detail to warrant the use of the space they occupy in the book. The chapter devoted to laboratory methods in otolaryngology is an unfortunate mixture of simple and involved procedures as well as a heterogeneous collection of semi-antique and modern methods. This chapter could he eliminated, or if retained, should be revised so as to be of real value.

These several criticisms have been presented in the hope that all who have the opportunity will read this volume carefully, and that these criticisms might act as a stimulation for this type of careful reading.

This review is presented with the idea of specifically recommending this textbook to all who are interested in the field of otolaryngology. The volume should be of some interest to the general practitioner and to the general surgeon. The present cost might seem to put it in the luxury class. The quality and caliber of the material presented is well worth the expenditure.

* * *

RENAL PELVIS AND URETER—Peter A. Narath, M.D., F.I.C.S., Adjunct Professor of Urology, New York Polyclinic Medical School and Hospital. Grune and Stratton, New York, 1951. 429 pages. $12.50.

Narath's book is of great interest to the student of urology, whether he is still in the medical school or whether he has been practicing urology for many years. It is a capitulation of the scientific data related to the normal pelvis and ureter. It is exceedingly thorough and presents much that is original with the author.

The book is of a size that readily fits the hand, it is easy to read, with clear type printed on a good grade of paper. There are a large number of illustrations, many of them descriptive, and schematic drawings. Numerous pyelograms, which are, in most cases, well defined, depict the normal upper urinary tract and aid in explaining its anatomy and function.

There are chapters on the normal pelvis, its structure and histology. The dynamics of the upper urinary tract, together with the various aspects of absorption and resorption are dealt with in detail.

Anomalies and malformations and some aspects of the various types of extravasation are dealt with briefly, but, in general, there is a noticeable lack of discussion of the numerous pathologic changes which would seem to be natural for this book. Most physicians today, the reviewer included, consult a text of this type primarily for help in understanding or clearing up some puzzling pathologic condition. On the other hand, this book completely fulfills what it claims to be, a study of the normal upper urinary tract.

* * *

GROUPING, TYPING AND BANKING OF BLOOD—Otakar Jaroslav Pollak, M.D., Ph.D., F.A.C.P., Director, Blood Bank, Chief, Departments of Anatomical, Clinical and Experimental Pathology, Quincy City Hospital, Quincy, Mass. Charles C. Thomas, Publisher, 1951. 163 pp. $5.75.

Pollak's new book, "Grouping, Typing and Banking of Blood," fulfills the publisher's foreword, "The complex subject of immunohematology and the banking of blood are covered in simple language that will keep the reader's attention to the end."

This book contains only 163 pages; however, each page and each line is stripped of unessential detail, thereby giving the volume compactness of text, clarity of thought, and a progressive documentation of facts which make it a real joy to read.

Many authors might easily become swamped by minutiae when dealing with such intricate problems, tests and checks. Pollak, however, leads the reader to the next page in a most convincing but simple manner. I particularly liked his treatment of "Sources of error in blood grouping." It is a "must" for all who carry out such important work. The three chapters on "Blood Banks" follow the prevalent trend of thought, but they also sharpen the picture and bring into proper focus this most modern adjunct of medicine.

Every book has some minor faults. I cannot pass over the spelling of "saggital," page 78, or "irregardless," page 76, the latter a colloquialism and not considered good usage. I deplore the tendency to shorten the terms, "Rh positive" and "Rh negative" to "RH" and "rh." It may lead to some confusion of thought. I would rather Figure 22, page 108, not show the nurse clasping the dependent bottle with one hand and holding the venipuncture needle with the other. If a nurse did this for each donor she would soon complain of a most severe backache. I am sure most obstetricians will not like to read that "Usually the obstetrician will be interested in the blood type only." He certainly is vitally interested in the Rh factor, and avidly reads about this relatively new discovery. Most women patients have read about the Rh factor and their doctor, for self-protection, must answer their direct questioning. These minor faults fade into insignificance when one views and studies the entire book. The book should be placed on every laboratory and blood bank reading shelf. It bridges the hiatus between the old and new policies, and the new procedures have been tested, checked and found to be good.

The manual is especially useful during these days of international tension. "Blood is more valuable than bullets." Pollak's succinct teachings will aid our nation's technicians to draw blood properly, process it carefully, and administer it guardedly.

* * *

INTERNAL MEDICINE — Its Theory and Practice — Originally edited by John H. Musser, B.S., M.D., F.A.C.P., late Professor of Medicine, Tulane University of Louisiana School of Medicine; Fifth Edition by Michael G. Wohl, M.D., F.A.C.P., Associate Professor of Medicine, Temple University School of Medicine, Chief of Nutrition Clinic, Philadelphia General Hospital, Chief of Endocrine Clinic, Temple University Hospital. 80 contributors, 236 illustrations and 10 colored plates. Lea & Febiger, Philadelphia, 1951. 1,563 pages. $15.00.

The object of this book is to provide a comprehensive one-volume survey of internal medicine. To this end some 80 contributors (including more from California than the average text published today or yesterday has had) have aided Dr. Wohl in the revision and enlargement of Musser's *Textbook of Internal Medicine*. So many chapters have been rewritten and so many new ones added since the fourth edition, published in 1945, that it may be regarded as a new book.

The larger part of the book is conventional in its presentation. There are seven sections. The first deals with infectious disease; the second with diseases due to physical and chemical agents; the third with diseases of nutrition, metabolism and the endocrine glands; the fourth with the allergic and collagen diseases; the fifth with systemic diseases; and the seventh with diseases of the nervous system. Part IV is composed of two chapters; The Care of the Aged by Kern and Medical Practice and Rehabilitation by Rusk; the former is particularly trenchant. Together these two chapters give recognition to a part of medical practice which is growing rapidly and needs much expansion in teaching. (There is an unfortunate mistake in the table of contents where the sixth section is labeled V and the seventh section VI.)

The book is generally commendable. It is a good reliable general reference for internal medicine and will be valuable to internists, general practitioners and students alike. It contains a minimal amount of medical old wives' tales. While brought up close to the investigative level its general tone of advice is conservative.

Inevitably it must be compared with Harrison's *Principles of Internal Medicine*. Here it suffers somewhat in that the general presentation and outline of thought have not broken as completely with the past. Also the format and make-up are not as attractive or exciting. However, as a reference it appears equally trustworthy.

The reviewer finds various individual statements with which he might differ and a tendency in some of the chapters to pack the pages with information without adequate explanation—which makes for indigestible reading. Examples may be taken from the generally well-done section on Contagious Diseases of Childhood: the Pastia sign is explained as an increase in the erythema in the skin folds, whereas—in the next sentence—the Rumple Leede sign is not explained. The authors advise against routine prophylaxis with chemotherapy in scarlet fever. They also state that Dukes' (or Fourth) Disease is communicable for 28 days after the appearance of the rash.

The deficiencies are minor and do not alter our recommendation of this book for use as a text or reference.

* * *

ATLAS OF HISTOLOGIC DIAGNOSIS IN SURGICAL PATHOLOGY — Karl T. Neubuerger, M.D., Professor of Pathology, University of Colorado School of Medicine, Denver; with a section on Exfoliative Cytology by Walter T. Wikle, B.S., M.S., M.D., Assistant Professor of Pathology, University of Colorado School of Medicine, Denver; photography by Glenn E. Mills, B.A., M.A., Department of Visual Education, University of Colorado School of Medicine, Denver. The Williams and Wilkins Company, Baltimore, 1951, 460 pages, $11.00.

Anyone attempting the task of assembling an Atlas of Surgical Pathology is to be commended. Within the limitations of black and white photomicrography, Dr. Neubuerger has assembled an impressive volume of material tabulated by organs and organ-systems. The author's purpose is to present a semi-systematized ready-reference on the histopathology of surgical tissues together with a brief differential diagnosis, by utilizing 880 photomicrographs. The contents are limited to surgical pathologic material, presented specifically for students in the various specialties and subspecialties.

Despite the author's avowed purpose in providing "those who are preparing for the specialty boards" with "the characteristic illustration and differential diagnosis," the sections on eye and ear pathology are inadequate. In some instances the photomicrographs are too small and lacking in sufficient detail to be of much value.

Many tissue sections appear dark and shrunken, no doubt due to inherent technical difficulties. This is especially true of the low power fields. Most high-power illustrations, however, are indeed beautifully prepared. Several examples, notably "basosquamous carcinoma" (Fig. 77), "dermatopathic lymphadenopathy" (Fig. 95) and a few others might have been more carefully selected to better represent the characteristic features. Others, designated as "pigmented neurofibroma" (Fig. 55), "dystrophia myotomica" (Fig. 134), are unconvincing.

It is desirable for students to familiarize themselves with synonyms. Even though the author has limited the nomenclature to that in general usage, avoiding synonyms, the terms, "senile keratosis," "seborrheic keratosis" and "verruca senilis" are erroneously used interchangeably. Synonyms for others, such as *papillary cystadenoma lymphomatosum*, *carcinoid*, *cirrhosis* (i.e., type), *carcinoma of bile ducts*, might profitably have been included.

The section on thyroid is good, both in context and technical detail. Those on skin and subcutaneous tissues and also on the uterus are plentifully illustrated.

The last section on Exfoliative Cytology by Dr. W. T. Wikle, well illustrated by carefully selected examples of high technical quality is, perhaps, the outstanding feature of the book.

The book is handsomely bound. The paper is high quality, and is free of typographical errors.

PROGRAM AND PRE-CONVENTION REPORTS

for the

CALIFORNIA MEDICAL ASSOCIATION

Eighty-First Annual Session

Los Angeles, April 27—April 30, 1952

Biltmore Hotel

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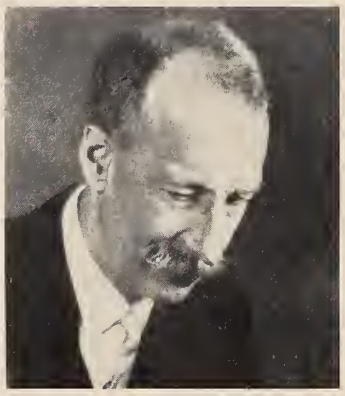

HAVEN EMERSON

EUGENE P. PENDERGRASS

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William S. McCann, M.D., Rochester, New York—Charles A. Dewey Professor of Medicine, University of Rochester School of Medicine.

Lester R. Dragstedt, M.D., Chicago, Illinois—Professor of Surgery, University of Chicago School of Medicine.

Haven Emerson, M.D., New York, New York—Professor Emeritus, Public Health Administration, Columbia University College of Physicians and Surgeons; Past President, American Public Health Association.

Eugene P. Pendergrass, M.D., Philadelphia, Pennsylvania—Professor of Radiology, University of Pennsylvania School of Medicine.

Other Section Speakers From Out of State

James W. Kernohan, M.D., Rochester, Minnesota—Professor of Pathology, and Head of Section on Pathologic Anatomy and Neuropathology, Mayo Clinic. Guest of the Section on Pathology and Bacteriology.

Edith L. Potter, M.D., Chicago, Illinois—Associate Professor of Pathology, Department of Obstetrics and Gynecology, University of Chicago School of Medicine. Guest of Sections on Pediatrics and Dermatology and Syphilology.

Willis J. Potts, M.D., Chicago, Illinois—Assistant Professor of Surgery, Northwestern University Medical School. Guest of the California Heart Association.

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Albert H. Newton	Harry L. Vidricksen
Solano County (2)	
John Garthe	Felix Rossi
Lionel Johnson	F. Burton Jones
Sonoma County (2)	
John J. Mohrman	Leonard W. Hines
Horace F. Sharrocks	Donovan C. Oakleaf
Stanislaus County (2)	
George S. Feher	O. D. Ellefson
Edward K. Prigge	M. C. Collins
Tehama County (2)	
R. G. Frey	A. H. Meuser
James T. McDuffie	O. T. Wood

Delegates	*Alternates*
Tulare County (2)	
J. H. Brady	Wiley C. Zink
James E. Feldmayer	C. H. Johnson
Ventura County (2)	
Franklin K. Helbling	Gerald K. Ridge
J. W. Moore	Woodrow W. Schmela
Yolo County (2)	
Robert A. Burns	John G. O'Hara
Ray E. Nichols	Thomas Y. Cooper
Yuba-Sutter-Colusa County (2)	
Stanley R. Parkinson	Joseph J. Salopek
Francis P. Wisner	Charles B. Kimmel

Past Presidents (15)

George H. Kress	1916
Edward N. Ewer	1925
Lyell C. Kinney	1930
Junius B. Harris	1931
George G. Reinle	1933
Robert A. Peers	1935
Harry H. Wilson	1940
William R. Molony, Sr.	1942
Karl L. Schaupp	1943
Lowell S. Goin	1944
Sam J. McClendon	1946
John W. Cline	1947
E. Vincent Askey	1948
R. Stanley Kneeshaw	1949
Donald Cass	1950

House of Delegates Agenda

1952 Annual Session

Music Room, Biltmore Hotel

Speaker, Donald Charnock, *Los Angeles*
Vice-Speaker, Henry A. Randel, *Fresno*
Secretary, Albert C. Daniels, *San Francisco*

FIRST MEETING
Sunday, April 27, 1952 at 9:30 a.m.

Order of Business

1. Call to order.
2. Report of Committee on Credentials, and Organization of the House of Delegates.
3. Roll call.
4. Announcement and approval of Reference Committees.
   (a) Committee on Credentials. (Delegates must register with the Committee.)
   (b) Reference Committee on the Reports of Officers, the Council and Standing and Special Committees. (Reference Committee No. 1.)
   (c) Reference Committee on Finance, to review the reports of the Secretary-Treasurer and the Executive Secretary and to study and make recommendations to the House of Delegates on the budget submitted by the Council and the amount of dues for the ensuing year (Reference Committee No. 2).
   (d) Reference Committee on Resolutions, Amendments to the Constitution and By-Laws and New and Miscellaneous Business (Reference Committee No. 3).
   (e) Reference Committee on Executive Session, to consider business brought before the House of Delegates in Executive Session. (Reference Committee No. 4.)
5. Address by President H. Gordon MacLean. Presentation of 50-Year Awards.
6. Miscellaneous announcements by the Speaker. (Stenographic service, to secure triplicate copies of resolutions, etc.)
7. Report of the President—H. Gordon MacLean.
8. Report of the President-elect—L. A. Alesen.
9. Report of the Speaker of the House of Delegates—Donald Charnock.
10. Report of the Vice-Speaker—H. A. Randel.
11. Report of the Council—Sidney J. Shipman.
12. Report of the Chairman of the Executive Committee—Donald D. Lum.
13. Report of the Trustees of the California Medical Association—H. Gordon MacLean, president.
14. Report of the Secretary—Albert C. Daniels.
15. Report of the Executive Secretary—John Hunton.
16. Report of the Editor—Dwight L. Wilbur.
17. Reports of District Councilors.
18. Reports of Councilors-at-Large.
19. Report of Legal Counsel—Peart, Baraty & Hassard.
20. Reports of Standing and Special Committees:
    A. Standing Committees:
    (a) Executive Committee—Donald D. Lum.
    (b) Committee on Associated Societies and Technical Groups—Robert A. Scarborough.
    (c) Auditing Committee—Donald D. Lum.
    (d) Committee on History and Obituaries—Dewey R. Powell.
    (e) Committee on Hospitals, Dispensaries, and Clinics—John B. Hamilton.
    (f) Committee on Industrial Practice—Jerome Shilling.
    (g) Committee on Medical Defense—H. Clifford Loos.
    (h) Committee on Medical Economics—Arthur A. Kirchner.
    (i) Committee on Medical Education and Medical Institutions—Francis Scott Smyth.
    (j) Military Affairs and Civil Defense—Justin J. Stein.
    (k) Physicians' Benevolence Committee—Axcel E. Anderson.
    (l) Committee on Postgraduate Activities—Edward C. Rosenow, Jr.
    (m) Committee on Public Policy and Legislation—Dwight H. Murray.
    (n) Committee on Public Relations—Ed Clancy.
    (o) Committee on Scientific Work (Annual Session)—Albert C. Daniels.
    (p) Cancer Commission—Robert A. Scarborough.
    (q) Editorial Board—Dwight L. Wilbur.
    B. Special Committees:
    (a) Delegates to the American Medical Association—E. Vincent Askey.
    (b) Advisory Planning Committee—John Hunton.
    (c) Blood Bank Commission—John Upton.
    (d) C.P.S. Liaison Committee—H. Gordon MacLean.
    (e) C.P.S. Study Committee—Wilbur Bailey.
    (f) Committee on Industrial Health—Christopher Leggo.
    (g) Committee on Rural Medical Service—Henry A. Randel.
    (h) C.P.S. Fee Schedule Committee—DeWitt K. Burnham.
21. Old and Unfinished Business.
22. New Business.

SECOND MEETING

Tuesday, April 29, at 9:30 a.m.

ORDER OF BUSINESS

1. Call to order.
2. Supplemental report of Credentials Committee.
3. Roll call.
4. Secretary's announcement of Council's selection of place for the 1953 annual session.
5. Election of Officers:
   (a) President-elect.
   (b) Speaker.
   (c) Vice-Speaker.
   (d) District Councilors (three-year term):
      1. First District—Francis E. West, San Diego (term expiring).
         First District—San Diego County.
      2. Second District—John D. Ball, Santa Ana (deceased)—for term expiring 1953.
         Second District—Imperial, Inyo, Mono, Orange, Riverside and San Bernardino counties.
      3. Fourth District—J. Philip Sampson, Santa Monica (term expiring).
         Fourth District—Los Angeles County.
      4. Seventh District—Hartzell H. Ray, San Mateo (term expiring).
         Seventh District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz counties.
      5. Tenth District—John W. Green, Vallejo (term expiring).
         Tenth District — Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Solano and Sonoma counties.
   (e) Councilors-at-Large (three-year terms):
   Benjamin Frees, Los Angeles (term expiring).
   C. V. Thompson, Lodi (term expiring).
   (f) Delegates to American Medical Association:
   Delegates and Alternates to the American Medical Association are elected for terms of two calendar years. The Delegates and Alternates to be elected at this meeting will serve for two calendar years ending December 31, 1954.

      Incumbents:
      (a) H. Gordon MacLean, Oakland (term expiring).
      (b) E. Vincent Askey, Los Angeles (term expiring).
      (c) Dwight L. Wilbur, San Francisco (term expiring).
      (d) Donald Cass, Los Angeles (term expiring).
      (e) Ralph B. Eusden, Long Beach (term expiring).
      (f) R. Stanley Kneeshaw, San Jose (term expiring).
   (g) Alternates to American Medical Association:

      Incumbents:
      (a) Leopold H. Fraser, Richmond (alternate to H. Gordon MacLean).
      (b) H. Clifford Loos, Los Angeles (alternate to E. Vincent Askey).
      (c) C. Kelly Canelo, San Jose (alternate to Dwight L. Wilbur).
      (d) L. Duke Mahannah, Long Beach (alternate to Donald Cass).
      (e) J. Lafe Ludwig, Los Angeles (alternate to Ralph B. Eusden).
      (f) Russel V. Lee, Palo Alto (alternate to R. Stanley Kneeshaw).
      (g) John D. Ball, deceased (alternate to L. A. Alesen)—for term expiring December 31, 1953.
6. Election of two members to C.M.A.-C.P.S. Liaison Committee.
7. Announcement by Secretary.
   Council's nominations of members of Standing Committees (for approval by the House of Delegates).
8. Reports of Reference Committees:
   (a) Report of Reference Committee No. 1 on Reports of Officers, the Council, and standing and Special Committees.
   (b) Report of Reference Committee No. 2 on Reports of the Secretary-Treasurer and the Executive Secretary, on budget and dues.
   (c) Report of Reference Committee No. 3 on Resolutions, Amendments to the Constitution and By-Laws and New and Miscellaneous Business.
   (d) Report of Reference Committee No. 4 on business brought before the House of Delegates in Executive Session.
9. Unfinished Business.
10. New Business.
11. Presentation of Officers:
    President
    President-Elect
    Speaker
    Vice-Speaker
12. Presentation of Certificate to Retiring President—H. Gordon MacLean.
13. Approval of Minutes. (Committee to edit.)
14. Adjournment.

DONALD A. CHARNOCK, *Speaker*
ALBERT C. DANIELS, *Secretary*

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Meeting of C.P.S. Administrative Members

April 27, 1952

AGENDA

1. Roll Call.
2. Report of the President: Donald Cass, M.D.
3. Report of Committee of Eight (Fee Schedule Committee).
4. Announcement of Nominating Committee.
5. Announcement of Resolutions Committee.
6. Introduction of Resolutions.
7. Recess (48 hours).

SECOND MEETING

1. Roll Call.
2. Consideration of report of Nominating Committee.
3. Consideration of resolutions and report of Resolutions Committee.
4. New business.

Old Business

PROPOSED CONSTITUTIONAL AMENDMENTS

Printed here for the second time are the proposed amendments to the Constitution of the California Medical Association that were introduced at the 1951 Annual Session, and that are to be acted upon by the House of Delegates at the 1952 meeting.

Submitted by Donald Carson, San Francisco:

Resolved, That subparagraph (c) of Section 9, Part B, of Article III of the Constitution be amended to read as follows:

(c) The President, President-Elect, Speaker and Vice-Speaker.

* * *

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article III, Part A, Section 1 of the Constitution be amended to read as follows:

The House of Delegates shall consist of

(a) Delegates elected by the members of component societies as provided in the By-Laws;

(b) Officers of the Association, as designated in Article VI, Section 1 of this Constitution. Excepting the Secretary-Treasurer and the Editor, they shall have the right to vote.

Anything in the Constitution and By-Laws which is in conflict with the foregoing is hereby repealed.

* * *

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article III, Part B, Section 11* of the Constitution be amended to read as follows:

(a) District Councilors shall be elected by vote of the delegates from each district in the manner and at the time specified in the By-Laws.

Paragraph (b) is hereby repealed, except that the present Councilors-at-Large shall complete their terms.

Anything in the Constitution and By-Laws in conflict with the foregoing is hereby repealed.

*Due to a typographical error, this amendment was introduced as applying to Article III, Part B, Section 9, whereas it is obvious that the author intended it to apply to Section 11.

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article III, Part B, Section 9 of the Constitution shall be amended to read as follows:

The Council shall consist of:

(a) Eleven District Councilors elected from the Councilor districts specified in this Constitution.

(b) The President, President-Elect and Speaker. In addition the Secretary-Treasurer and Editor, but without the right to vote.

Anything in the Constitution and By-Laws which is in conflict with the foregoing is hereby repealed.

* * *

Submitted by E. T. Remmen, Los Angeles:

Be It Resolved, That Article IV, Section 5 of the Constitution be amended to read as follows:

At each regular session of the House of Delegates, the Council shall submit to it an itemized budget stating the proposed expenditures of the Association for the ensuing year. The budget may be altered or revised by the House of Delegates, but must be adopted by the House before adjournment of the session. After its adoption, no expenditures in excess of the amount of the budget item covering the subject of such expenditures may be made in the year covered by the budget by the Association or any of its officers, agents or employees, unless the Council by a three-fourths vote of all voting members shall first approve such excess expenditure by resolution duly adopted, and further provided that in no instance may the Council expend funds in any fiscal year in excess of 25 per cent more than the total amount of the budget without permission of the House of Delegates. Recurring items in the budget (fixed expenditures covering more than one year) shall, when first adopted, be binding as to the subsequent budgets to the extent of commitments or obligations entered into by the Association within authority granted by the House of Delegates or this Constitution or the By-Laws.

SCIENTIFIC SESSIONS

General Meetings

FIRST GENERAL MEETING

SUNDAY, APRIL 27

3:00—Biltmore Theatre

Chairman: H. Gordon MacLean, M.D., Oakland

3:00—**Address of Welcome**—Wilbur Bailey, M.D., President, Los Angeles County Medical Association.

3:05—**Greetings from the Woman's Auxiliary** — Mrs. Stanley R. Truman, President Woman's Auxiliary to the California Medical Association.

3:10—**Address of the President** — H. Gordon MacLean, M.D., Oakland.

3:40—**Changing Concepts in Medical Treatment**—Charles L. Brown, M.D., Philadelphia, Pennsylvania, by invitation.

4:10—**The Meaning of Disease**—William S. McCann, M.D., Rochester, New York, by invitation.

4:40—**The Physiology of Gastric Secretion and the Ulcer Problem**—Lester R. Dragstedt, M.D., Chicago, Illinois, by invitation.

SECOND GENERAL MEETING

MONDAY, APRIL 28

2:00—Biltmore Theatre

Chairmen: William P. Longmire, Jr., M.D., Los Angeles
Edgar Frank Mauer, M.D., Los Angeles

2:00—**Medical Care and Public Health Service** — Haven Emerson, M.D., New York, New York, by invitation.

2:30—**The Role of the Radiologist in Diagnosis of Chest Lesions**—Eugene P. Pendergrass, M.D., Philadelphia, Pennsylvania, by invitation.

3:00—**Question and Answer Period.**

Clinical-Pathological Conference

3:15—Case No. 1—Pathologist Charles P. Baker, M.D., Oakland. Surgeon Lester R. Dragstedt, M.D., Chicago, Illinois, by invitation. Radiologist Eugene P. Pendergrass, M.D., Philadelphia, Pennsylvania, by invitation.

4:00—Case No. 2—Pathologist Fremont E. Davis, M.D., Alhambra. Clinician William S. McCann, M.D., Rochester, New York, by invitation.

EMERGENCY CALLS

Notify your office or exchange regarding the meetings you plan to attend. In cases of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, DUnkirk 7-7175; Sunday and evenings after 5:00 p.m., DUnkirk 7-8141.

Section Meetings

GENERAL MEDICINE

Edgar Frank Mauer, M.D., Los Angeles, *Chairman*
J. Malcolm Stratton, M.D., Berkeley, *Secretary*
William D. Evans, M.D., North Hollywood, *Assistant Secretary*

EDGAR FRANK MAUER
Chairman

J. MALCOLM STRATTON
Secretary

MONDAY, APRIL 28

9:30—Auditorium, Sunkist Building

Joint Meeting with Sections on General Surgery and Radiology

For Program, see Section on General Surgery

TUESDAY, APRIL 29

9:30—Auditorium, Sunkist Building

9:30—**Rheumatic and Congenital Heart Disease—Some Statistical Findings** — A. F. Goggio, M.D., Berkeley.

9:40—**Phenylbutazone and Related Compounds in the Treatment of Rheumatic Disease**—William C. Kuzell, M.D., and Ralph W. Schaffarzick, M.D., San Francisco.

9:50—**Newer Hematinics, Their Use and Abuse**—William F. Luttgens, M.D., San Francisco.

10:05—**New Therapy for Leukemia, Polycythemia and Lymphoma**—Arthur A. Marlow, M.D., La Jolla.

10:20—**Indications for Splenectomy** — S. P. Lucia, M.D., San Francisco.

10:35—**Effects of Compound F in Rheumatoid Disease**—Edward F. Boland, M.D., Los Angeles.

10:55—**Intermission.**

11:00—**Problems in the Treatment of Virus Pneumonia**—Morris F. Collen, M.D., Oakland.

11:15—**Coxsackie Viruses and Their Epidemicity**—Charles M. Carpenter, M.D., Los Angeles; Ruth A. Boak, M.D., Los Angeles, by invitation.

11:30—**Adventures in the Study of Breathing**—William S. McCann, M.D., Rochester, N. Y., by invitation.

11:55—**Annual Meeting—California Society of Internal Medicine.**

WEDNESDAY, APRIL 30

9:30—Auditorium, Sunkist Building

9:30—**Thyroxin Synthesis Measured with Radioactive Iodine in the Evaluation of Equivocal States of Thyroid Function**—M. E. Morton, M.D., Long Beach, by invitation.

9:45—**The Diagnosis of Morphologic Abnormalities of the Human Thyroid Gland by Means of I^{131}**—Franz K. Bauer, M.D., Los Angeles.

10:00—**Diabetic Retinitis—Its Control**—J. W. Sherrill, M.D., La Jolla.

10:15—**Panel Discussion—What is the Ideal Level of Diabetic Control?**

Moderator: Helen E. Martin, M.D., Los Angeles.

Panel: Charles L. Brown, M.D., Philadelphia, Pa., by invitation; J. W. Sherrill, M.D., La Jolla; Douglas Drury, M.D., Los Angeles, by invitation; and G. B. Robson, M.D., San Francisco.

10:40—**Intermission.**

10:45—Relationship of Diet to the Correlation of Serum Cholesterol and Lipoprotein with Clinical Atherosclerosis — John Gofman, M.D., Berkeley, by invitation.

11:00—Controlled Experimental Observations on the Relationship of Serum Lipids in Normal and Abnormal Subjects—Lawrence Kinsell, M.D., Oakland.

11:15—Discussion.

11:25—Business Meeting and Election of Officers.

11:30—Two Kinds of Death—William S. McCann, M.D., Rochester, N. Y., by invitation.

WEDNESDAY, APRIL 30

1:30—Music Room, Biltmore Hotel

Cardiac Surgery

This program has been arranged jointly by the California Heart Association and the Section on General Medicine

Chairmen: Francis L. Chamberlain, M.D., President, California Heart Association
Edgar F. Mauer, M.D., Chairman, Section on General Medicine

1:30—Problems in Anesthesia During Cardiac Surgery—Judson S. Denson, M.D., Los Angeles.

1:45—Abnormal Cardiac Findings Occurring During Cardiac Surgery—Harold Miller, M.D., Los Angeles, by invitation.

2:05—Cardiac Resuscitation — Sanford E. Leeds, M.D., San Francisco.

2:25—Clinical Experiences with Vascular Anomalies of the Aortic Arch—Paul C. Samson, M.D., Oakland.

2:45—Recent Advances in the Surgery of Large Arteries — Norman E. Freeman, M.D., San Francisco.

3:05—Intermission.

3:20—Anomalous Drainage of the Pulmonary Veins —H. Brodie Stephens, M.D., San Francisco.

3:40—Surgical Aspects of Pulmonary Stenosis—B. W. Meyer, M.D., Los Angeles.

4:00—Surgical Aspects of Mitral Stenosis—John C. Jones, M.D., Los Angeles.

4:20—Surgery of Cyanotic Heart Disease—Willis J. Potts, M.D., Chicago, Illinois, by invitation.

Bring Proper Identification for Registration

GENERAL SURGERY

William P. Longmire, Jr., M.D., Los Angeles, *Chairman*
Paul C. Samson, M.D., Oakland, *Secretary*
Arthur C. Pattison, M.D., Pasadena, *Assistant Secretary*

WILLIAM P. LONGMIRE, JR.
Chairman

PAUL C. SAMSON
Secretary

MONDAY, APRIL 28

9:30—Auditorium, Sunkist Building

Joint Meeting with Sections on General Medicine and Radiology

Symposium

Diseases of the Pancreas

9:30—**Adenoma of the Islets of Langerhans**—James H. Saint, M.D., Santa Barbara.

9:45—**The Clinical Picture of Pancreatic Insufficiency**—Charles L. Brown, M.D., Philadelphia, Pennsylvania, by invitation.

10:10—**Roentgen Diagnosis of Diseases of the Pancreas**—Eugene P. Pendergrass, M.D., Philadelphia, Pennsylvania, by invitation.

10:35—**Pathological and Physiological Correlations in Various Diseases of the Pancreas**—Hugh A. Edmondson, M.D., Los Angeles.

10:55—**Some Technical Considerations in Relation to Surgery of the Pancreas**—Carleton Mathewson, M.D., San Francisco.

11:15—**Some Physiologic Problems Involved in the Surgery of the Pancreas**—Lester R. Dragstedt, M.D., Chicago, Illinois, by invitation.

11:40—**Round Table Discussion**

Moderator: William P. Longmire, Jr., M.D.

Members of Panel: Charles L. Brown, M.D., Lester R. Dragstedt, M.D., Hugh A. Edmondson, M.D., Carleton Mathewson, M.D., and Eugene P. Pendergrass, M.D.

TUESDAY, APRIL 29

9:30—Auditorium, Southern California Edison Building

9:30—**Chairman's Address: A Review of Surgery of the Adrenal Glands**—William P. Longmire, Jr., M.D., Los Angeles.

9:50—**Repair of Strictures of the Bile Duct by the Transduodenal Route**—Lester R. Dragstedt, M.D., Chicago, Illinois, by invitation.

10:10—**Statistical Report on Tumors of the Endocrine Glands, Reported by Hospitals Participating in the California Central Tumor Registry**—James W. Ellis, M.D., Lester Breslow, M.D., Berkeley, and Martha Simmons, S.C.M., Berkeley, by invitation.

Discussion.

10:30—**Prevention of Surgical Complications**—Suren H. Babington, M.D., Berkeley.

Discussion.

10:50—**Surgical Treatment of the Postphlebitic Leg**—Harold P. Totten, M.D., Inglewood.

Discussion.

11:10—**Recurring Breast Abscesses in the Areolar Area** — Alson R. Kilgore, M.D., and Ruth Fleming, M.D., San Francisco.

Discussion.

11:30—**Is Radical Mastectomy Still the Preferred Treatment in Operable Breast Cancer?**—Harry E. Peters, Jr., M.D., Oakland.

Discussion.

11:50—**Routine Gastroduodenostomy After Gastric Resection**—R. L. Zieber, M.D., and J. M. Kenney, M.D., Santa Rosa.

Discussion.

12:10—**Annular Pancreas — Late Postoperative Sequelae**—Alfred J. Goldyne, M.D., and Everett Carlson, M.D., San Francisco.

WEDNESDAY, APRIL 30

9:30—Auditorium, Southern California Edison Building

9:30—**Diaphragmatic Herniation Through the Space of Morgagni**—Donald F. Rowles, M.D., Oakland, by invitation, and Gerald L. Crenshaw, M.D., Oakland.

Discussion.

9:50—**Mediastinal Tumors of Thymic Origin**—Frederick M. Binkley, M.D., and Jack D. Thorburn, M.D., San Francisco, both by invitation; and H. Brodie Stephens, San Francisco.

Discussion.

10:10—**Mesenteric and Retroperitoneal Apoplexy**—Glenn F. Cushman, M.D., San Francisco.

Discussion.

10:30—**Business Meeting and Election of Officers.**

10:40—**The Diagnosis and Surgical Management of Primary Neoplasms of the Adrenal Gland**—Harry A. Davis, M.D., and Irving A. Fields, M.D., Los Angeles; and Alex Gerber, M.D., Alhambra.

Discussion.

11:10—**Carcinoma of the Colon**—Orville F. Grimes, M.D., and H. Glenn Bell, M.D., San Francisco.

Discussion.

11:20—**The Surgical Treatment of Malignant Melanoma**—Jack M. Farris, M.D., Los Angeles.

Discussion.

11:40—**The Role of Plastic Surgery in Cancer of the Head and Neck**—Edward S. Lamont, M.D., Hollywood.

Discussion.

12:00—**Bilateral Simultaneous Radical Neck Dissection with Recovery**—A Report of Two Cases —S. L. Perzik, M.D., Beverly Hills.

Discussion.

WEDNESDAY, APRIL 30

1:30—Music Room, Biltmore Hotel

Symposium on Cardiac Surgery

For Program, see Section on General Medicine

Admission to Sessions and Exhibits by Registration Badge Only

GENERAL PRACTICE

John B. Long, M.D., Sacramento, *Chairman*
Merlin L. Newkirk, M.D., South Gate, *Secretary*
A. Bradford Carson, M.D., Oakland, *Assistant Secretary*

JOHN B. LONG
Chairman

MERLIN L. NEWKIRK
Secretary

MONDAY, APRIL 28

9:30—Music Room, Biltmore Hotel

Joint Meeting with Section on Anesthesiology

For Program, see Section on Anesthesiology.

MONDAY, APRIL 28

2:00—Conference Room 2, Biltmore Hotel

2:00—**Management of Common Problems of Abortion**—George E. Judd, M.D., Los Angeles.
Discussion.

2:30—**Early Clinical Diagnoses of Malignant Melanomas**—Molleurus Couperus, M.D., Los Angeles.
Discussion.

3:00—**Treatment of Pain and Neuromuscular Tension with Intravenous Tetracaine (Pontocaine)**—John S. Horan, M.D., Berkeley, by invitation.
Discussion.

3:30—**Indications for Radical Surgery in Extensive Malignant Disease**—Charles J. Miller, M.D., Huntington Park.
Discussion.

4:00—**Impaired Hearing in Children**—H. W. Kohlmoos, M.D., Oakland.
Discussion.

TUESDAY, APRIL 29

9:30—Chapel, Baptist Church, Philharmonic Building

9:30—**The Medical Significance and Treatment of Reading Difficulty**—Roy Swartout, III, M.D., El Monte.
Discussion.

10:00—**Anomalies versus Fractures**—Packard Thurber, Jr., M.D., Los Angeles.
Discussion.

10:30—**Is It a Neurosis?**—John R. Peters, M.D., Los Angeles, by invitation.
Discussion.

11:00—**Chairman's Address: Mental Medication for Your "Sick" Patient**—John B. Long, M.D., Sacramento.

11:30—**Business Meeting—Election of Officers.**

WEDNESDAY, APRIL 30

9:30—Music Room, Biltmore Hotel

Joint Meeting with Section on Public Health

Symposium on Poliomyelitis

For Program, see Section on Public Health

ALLERGY

Samuel H. Hurwitz, M.D., San Francisco, *Chairman*
M. Coleman Harris, M.D., Vallejo, *Vice-Chairman*
Grace M. Talbott, M.D., San Francisco, *Secretary*

SAMUEL H. HURWITZ
Chairman

GRACE M. TALBOTT
Secretary

WEDNESDAY, APRIL 30

9:30—Conference Room 4, Biltmore Hotel

9:30—**The Interpretation of Skin Reactions in California Residents**—George F. Harsh, M.D., San Diego.
Discussion.

9:50—**Acute Exfoliative Dermatitis Due to Dormison**—James Delamater, M.D., Pasadena.
Discussion.

10:10—**Pulmonary Infiltration in Allergic Disease**—Ben F. Feingold, M.D., San Francisco.
Discussion.

10:30—**Anaphylaxis in the Hamster**—Lazarre J. Courtright, M.D., and Walter Hook, M.D., San Francisco.
Discussion.

10:50—**Observations on Castor Bean Allergy in Southern California**—Willard S. Small, M.D., Pasadena.
Discussion.

11:10—**Chairman's Address: Allergy as a Specialty—Past Achievements and Future Trends**—Samuel H. Hurwitz, M.D., San Francisco.

WEDNESDAY, APRIL 30

2:00—Conference Room 4, Biltmore Hotel

2:00—**The Problem of Chronic Urticaria**—Robert W. Tufft, M.D., Oakland.
Discussion.

2:30—**Bacterial Allergy**—Sidney Raffel, M.D., Stanford, by invitation.

3:00—**Certain Problems Related to Allergy in Ophthalmology**—Rufus C. Goodwin, M.D., San Francisco.
Discussion.

3:25—Recess.

3:45—**Psychosomatic and Allergic Study of a Pair of Identical Twins**—Robert H. Crede, M.D., San Francisco; Charles Carmen, M.D., San Francisco, by invitation; and Robert Whaley, M.D., and Irwin Schumacher, M.D., San Francisco.
Discussion.

4:10—**The Position of Psychotherapy in Allergy: Credits and Debits**—Elizabeth Sirmay, M.D., Beverly Hills.
Discussion.

Bring Proper Identification for Registration

ANESTHESIOLOGY

Fenimore E. Davis, M.D., Oakland, *Chairman*
Nevin H. Rupp, M.D., Los Angeles, *Secretary*
Joseph H. Failing, M.D., San Marino, *Assistant Secretary*

FENIMORE E. DAVIS
Chairman

NEVIN H. RUPP
Secretary

MONDAY, APRIL 28

9:30—Music Room, Biltmore Hotel

Joint Meeting with Section on General Practice

9:30—**General Anesthetic Agents in General Practice**—Paul Russell, M.D., Inglewood.

Discussion by Willis G. Watrous, M.D., San Jose.

10:00—**Block Anesthesia Suitable for Office Use**—Charles F. McCuskey, M.D., Glendale.

Discussion by Frederick Leix, M.D., Los Angeles.

10:30—**Panel Discussion—Anesthetic Problems in General Practice**

Forrest E. Leffingwell, M.D., Pasadena, Moderator.

Panel: Charles F. McCuskey, M.D.; Paul Russell, M.D.; Frederick Leix, M.D., and Willis G. Watrous, M.D.

MONDAY, APRIL 28

2:00—Conference Room 4, Biltmore Hotel

2:00—**Pathogenesis and Treatment of Causalgia**—Victor Kuenkel, M.D., Los Angeles.

Discussion by Judson Samuel Denson, M.D., Los Angeles.

2:30—**Techniques for Infants' and Children's Anesthesia for the General Practitioner**—Ernest B. Eldridge, M.D., Hollywood.

Discussion by Isabel DeYoung Brown, M.D., Inglewood.

3:00—**Does Your Hospital Need a Recovery Room?**—Thomas McIntosh, M.D., Pasadena.

Discussion by William H. Moran, M.D., La Canada.

3:30—**Chairman's Address: Experience in Resuscitation of the Newborn**—Fenimore E. Davis, M.D., Oakland.

Discussion by Casimir Harris, M.D., Pasadena, and George W. Bachman, M.D., Altadena.

4:00—**Business Meeting and Election of Officers.**

Visit the Technical and Scientific Exhibits

DERMATOLOGY AND SYPHILOLOGY

J. Walter Wilson, M.D., Los Angeles, *Chairman*
Kenneth L. Stout, M.D., Beverly Hills, *Secretary*
Frances Keddie, M.D., Palo Alto, *Assistant Secretary*

J. WALTER WILSON
Chairman

KENNETH L. STOUT
Secretary

MONDAY, APRIL 28

9:30—Conference Room 2, Biltmore Hotel

9:30—Cytodiagnosis in Virus and Other Diseases of the Skin—Graves Douglas Baldridge, M.D., Los Angeles, by invitation, and Thomas H. Sternberg, M.D., Los Angeles.
Discussion.

9:50—A New Concept in the Treatment of Neurodermatitis—Paul D. Foster, M.D., Los Angeles.
Discussion.

10:10—Chairman's Address: Coccidioidomycosis as a Tool in the Study of Granulomatous Disease —J. Walter Wilson, M.D., Los Angeles.

10:40—Staining Techniques in Ringworm Diagnosis —Robert C. Lofgren, M.D., San Francisco, and Elmer Batts, M.D., San Francisco, by invitation.
Discussion.

11:10—Evidence for Vitamin A Toxicity—Craig Williamson, M.D., Marjorie Bauer, M.D., and Jud R. Scholtz, M.D., Pasadena.
Discussion.

11:30—Cat-Scratch Fever — Ervin Epstein, M.D., Oakland.
Discussion.

11:50—Business Meeting and Election of Officers.

MONDAY, APRIL 28

2:00—Music Room, Biltmore Hotel

Joint Meeting with Section on Pediatrics

Moderator: Arthur H. Parmlee, M.D., Beverly Hills

2:00—Serious and Fatal Skin Diseases in Infants and Children—Edith L. Potter, M.D., Chicago, Illinois, by invitation.
Discussion.

3:00—The Lymphoblastomas in Childhood—Lawrence M. Nelson, M.D., Santa Barbara.
Discussion.

3:20—Moles, Melanomas and Epitheliomas in Childhood—Nelson Paul Anderson, M.D., Los Angeles.
Discussion.

3:40—Skin Diseases of Children in Relation to Lipoid Metabolic Disturbances—Mary B. Olney, M.D., San Francisco.
Discussion.

4:10—Angiomas—Correlation of Clinical with Histological Findings—L. H. Winer, M.D., Beverly Hills.
Discussion.

EYE, EAR, NOSE AND THROAT

Maurice W. Nugent, M.D., Los Angeles, *Chairman*
Robert C. McNaught, M.D., San Francisco, *Secretary*
Alfred R. Robbins, M.D., Los Angeles, *Assistant Secretary*

MAURICE W. NUGENT
Chairman

ROBERT C. McNAUGHT
Secretary

MONDAY, APRIL 28

9:30—Conference Room 8, Biltmore Hotel

9:30—**Theoretical Considerations of the Etiology and Treatment of Epistaxis**—John B. Hollingsworth, M.D., Oakland.
Discussion.

10:00—**Odontogenic Tumors and Cysts**—Walter E. Heck, M.D., San Francisco.
Discussion.

10:30—**Effects of Cortisone on Experimental Lye Burn of the Esophagus**—Alex W. Weisskopf, M.D., San Mateo.
Discussion.

11:00—**Report of a Case of Gunshot Wound of the Trachea**—Wendell Weller, Colonel, MC, USA, San Francisco, by invitation.
Discussion.

11:30—**Extended Laryngectomy with Radical Neck Dissection — One Stage** — S. Kaplan, M.D., Long Beach, by invitation.
Discussion.

MONDAY, APRIL 28

2:00—Conference Room 8, Biltmore Hotel

2:00—**General Anesthetic in Ophthalmology** — George L. Kilgore, M.D., San Diego.
Discussion.

2:30—**Report of a Patient with Stevens-Johnson Syndrome Treated with Cortisone and ACTH** —George P. Landegger, M.D., Los Angeles.
Discussion.

3:00—**A Case of Scleromalacia Perforans**—Orwyn H. Ellis, M.D., Los Angeles.
Discussion.

3:30—**Photophobia**—Jay Randolph Sharpsteen, M.D., Oakland.
Discussion.

4:00—**Intranasal Dacryocystorhinostomy** — Marvin W. Simmons, M.D., Fresno.
Discussion.

4:30—**Business Meeting and Election of Officers.**

Admission to Sessions and Exhibits by Registration Badge Only

INDUSTRIAL MEDICINE AND SURGERY

Herbert C. Sanderson, M.D., Sacramento, *Chairman*
Orris R. Myers, M.D., Eureka, *Secretary*
Packard Thurber, Jr., M.D., Los Angeles, *Assistant Secretary*

HERBERT C. SANDERSON
Chairman

ORRIS R. MYERS
Secretary

MONDAY, APRIL 28

9:30—Conference Room 4, Biltmore Hotel

9:30—**An Unusual Industrial Back**—Harold Crowe, M.D., Los Angeles.
Discussion.

10:00—**Surgery of the Great Toe Joint**—Daniel Levinthal, M.D., Beverly Hills, and George Kraft, M.D., North Hollywood.
Discussion.

10:30—**Exposure Treatment of Burns**—William S. Kiskadden, M.D., and Sanford R. Dietrich, M.D., Los Angeles.
Discussion.

11:00—**The General Practitioner Must Participate in Industrial Health!—How?**—Rutherford T. Johnstone, M.D., Los Angeles.
Discussion.

11:30—**Chairman's Address: Grasping Power**—Herbert C. Sanderson, M.D., Sacramento.

12:00—**Business Meeting and Election of Officers.**

TUESDAY, APRIL 29

9:30—Conference Room 5, Biltmore Hotel

9:30—**Peripheral Vascular Disorders Caused by Industrial Occupations** — Henry Cuneo, M.D., Los Angeles.
Discussion.

10:00—**Special Examination of the Questionable Compensation Claim**—Dan Kilroy, M.D., Sacramento.
Discussion.

10:30—**The Evaluation of Fracture Healing**—Vernon P. Thompson, M.D., Los Angeles.
Discussion.

11:00—**Double Contrast Media Arthrography**—Leon Parker, M.D., San Francisco.
Discussion.

11:30—**Stress of Allergic Backache**—Alonzo J. Neufeld, M.D., Los Angeles.
Discussion.

Bring Proper Identification for Registration

OBSTETRICS AND GYNECOLOGY

Woodburn K. Lamb, M.D., Berkeley, *Chairman*
Hervey K. Graham, M.D., San Diego, *Vice-Chairman*
Donald W. de Carle, M.D., San Francisco, *Secretary*

WOODBURN K. LAMB
Chairman

DONALD W. DE CARLE
Secretary

TUESDAY, APRIL 29

9:30—Music Room, Biltmore Hotel

Joint Meeting with Section on Urology

For Program, see Section on Urology

WEDNESDAY, APRIL 30

9:30—Chapel, Baptist Church, Philharmonic Building

9:30—**Immediate Postpartum Repair of Third Degree Lacerations**—James V. McNulty, M.D., Los Angeles.
Discussion.

10:00—**The Importance of Proctology in the Field of Obstetrics and Gynecology**—A. J. Murrieta, Jr., M.D., Los Angeles.
Discussion.

10:30—**Retrolental Fibroplasia: Blindness in Infants of Low Birth Weight** — Alfred Appelbaum, M.D., Huntington Park.
Discussion.

11:00—**Studies of Blood Volume During Pregnancy** —Carl Goetsch, M.D., Berkeley.
Discussion.

11:30—**Business Meeting and Election of Officers.**

WEDNESDAY, APRIL 30

2:00—Auditorium, Sunkist Building

2:00—**Chairman's Address**—Woodburn K. Lamb, M.D., Berkeley.

2:30—**Lesions of the Cervix**—Wilson Footer, M.D., Oakland.
Discussion.

3:00—**The Acute Abdomen in Pregnancy**—Charles Langmade, M.D., Pasadena.
Discussion.

4:00—**Sexual Functions of the Pubococcygeus Muscle—Diagnosis and Therapy**—Arnold H. Kegel, M.D., Los Angeles.
Discussion.

Visit the Technical and Scientific Exhibits

PATHOLOGY AND BACTERIOLOGY

Leon John Tragerman, M.D., Los Angeles, *Chairman*
Charles M. Blumenfeld, M.D., Sacramento, *Secretary*
A. R. Camero, M.D., Los Angeles, *Assistant Secretary*

LEON JOHN TRAGERMAN
Chairman

CHARLES M. BLUMENFELD
Secretary

MONDAY, APRIL 28

9:30—Conference Room 5, Biltmore Hotel

9:30—**The Alperene Granuloma After Injection Therapy in Hernia**—Leo Kaplan, M.D., Los Angeles, by invitation.

9:50—**Modifications of the Middlebrook-Dubos Test**—Bruno Gerstl, M.D., Oakland; and J. W. Winter, Ph.D., and A. G. Hollander, M.D., Oakland, both by invitation.

10:10—**Cytomegalic Inclusion Disease in an Adult**—J. D. Langston, Commander (MC) USN, and J. L. Zundell, Capt. (MC) USN, Oakland, by invitation.

10:30—**A Classification of Parotid Tumors**—G. Gordon Hadley, M.D., and Louisa Keasbey, M.D., Los Angeles.

11:00—**The Mechanical Effects of the Displacement of the Brain by Tumor**—J. W. Kernohan, M.D., Rochester, Minn., by invitation.

MONDAY, APRIL 28

2:00—Conference Room 5, Biltmore Hotel

2:00—**Coccidioidomycosis of the Epididymis—Report of Two Cases**—George Amromin, M.D., Exeter, and Charles M. Blumenfeld, M.D., Sacramento.

2:20—**Chairman's Address**—Leon John Tragerman, M.D., Los Angeles.

3:00—**Papillomas of the Breast**—Jesse Carr, M.D., San Francisco, and Milton Rosenthal, M.D., Los Angeles.

3:20—**Carcinoma of the Prostate in Males Eighty or Over**—Albert E. Hirst, Jr., M.D., and R. T. Bergman, M.D., Los Angeles.

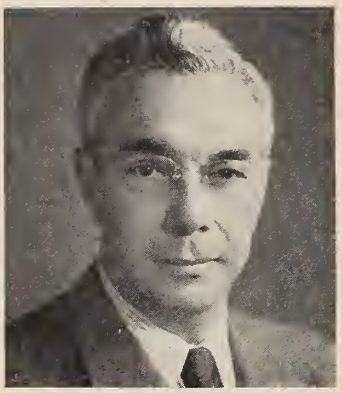
3:40—**Business Meeting—Election of Officers.**

4:10—**Recess—Semi-annual Meeting, California Society of Pathologists.**

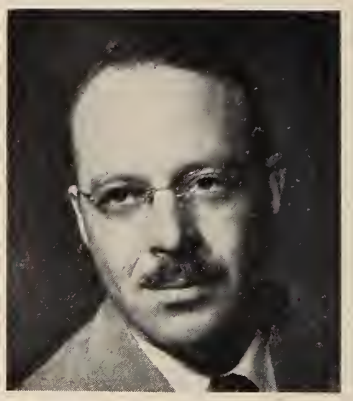
Admission to Sessions and Exhibits by Registration Badge Only

PEDIATRICS

Joseph W. St. Geme, M.D., Los Angeles, *Chairman*
Alvin H. Jacobs, M.D., San Francisco, *Secretary*
Clement J. Molony, M.D., Beverly Hills, *Assistant Secretary*



JOSEPH W. ST. GEME
Chairman



ALVIN H. JACOBS
Secretary

MONDAY, APRIL 28

9:30—Auditorium, Southern California Edison Building

9:30—**Anuria Due to Urethral Obstruction by a Sulfonamide Derivative**—Carl L. Biorn, M.D., Palo Alto.

10:00—**Breath-Holding Spells** — Lloyd B. Dickey, M.D., San Francisco.

10:30—**Bronchoscopy of the Newborn** — Robin P. Michelson, M.D., San Francisco.
Discussion by Simon Jesberg, M.D., Los Angeles.

11:00—**Emergencies in the Newborn**—Gilbert M. Jorgensen, M.D., Los Angeles.
Discussion by Mr. V. Ray Bennett, by invitation, Los Angeles.

11:30—**Evaluation of ACTH and Cortisone Therapy in Rheumatoid Arthritis**—Merl J. Carson, M.D., by invitation, and Mary Mulloy, M.D., by invitation, Los Angeles.

12:00—**Business Meeting.**

MONDAY, APRIL 28

2:00—Music Room, Biltmore Hotel

Joint Meeting with Section on Dermatology and Syphilology

For Program, see Section on Dermatology and Syphilology

WEDNESDAY, APRIL 30

2:00—Auditorium, Southern California Edison Building

Panel Discussion

What's New in Pediatrics

2:00—**Recent Advances in Pediatric Surgery**—Victor Richards, M.D., San Francisco.

2:20—**Treatment of the Nephrotic Syndrome** — Edward C. Persike, M.D., San Francisco.

2:40—**Common Household Poisoning**—Rea F. Chittenden, M.D., North Hollywood.

3:00—**The Adoption Problem**—Donald G. Tollefson, M.D., Los Angeles.

3:20—**The Feeding of Premature Infants with the Indwelling Polyethylene Catheter** — Stephen Royce, M.D., San Marino.

3:40—**The Treatment of Burns in Children**—Allyn J. McDowell, M.D., North Hollywood.

4:00—**The Challenge of the Well Child** — A. Joe Scull, M.D., San Francisco, by invitation.

4:20—**Open Discussion:** Questions from the floor are invited.

PSYCHIATRY AND NEUROLOGY

O. W. Jones, Jr., M.D., San Francisco, *Chairman*
Cyril B. Courville, M.D., Los Angeles, *Secretary*
Aidan A. Raney, M.D., Los Angeles, *Assistant Secretary*

O. W. JONES, Jr.
Chairman

CYRIL B. COURVILLE
Secretary

WEDNESDAY, APRIL 30

9:30—Conference Room 8, Biltmore Hotel

9:30—**Chairman's Address: Traumatic Chronic Subdural Hematoma**—O. W. Jones, Jr., M.D., San Francisco.

10:00—**New Vistas in Psychosomatic Medicine**—Alfred E. Coodley, M.D., Los Angeles.

Discussion by Philip Solomon, M.D., Beverly Hills, and Julius Bauer, M.D., Hollywood.

10:30—**Studies in Cerebral Metabolism**—Eugene Eisenberg, M.D., John E. Adams, M.D., Gilbert Gordon, M.D., San Francisco; and Richard Bentinck, M.D., and Harold Harper, Ph.D., San Francisco, both by invitation.

Discussion by Augustus Rose, M.D., and Horace W. Magoun, Ph.D., Los Angeles.

11:00—**The Problem of Barbiturate Intoxication—Recent Advances in Its Therapeutic Management**—Eugene A. Hargrove, M.D.; A. E. Bennett, M.D.; and F. R. Ford, M.D., Berkeley.

Discussion by Esther Bogen Tietz, M.D., Los Angeles.

11:30—**Auxiliary Treatment of Psychotic Women—Group Therapy with Their Husbands**—Gene Gordon, M.D., by invitation, and Karl M. Bowman, M.D., San Francisco.

Discussion by Esther Somerfeld-Ziskind, M.D., Los Angeles, and Samuel Futterman, M.D., Beverly Hills.

WEDNESDAY, APRIL 30

2:00—Conference Room 8, Biltmore Hotel

2:00—**Business Meeting and Election of Officers.**

2:10—**Postural Vertigo and Positional Nystagmus**—Russell Fletcher, M.D., San Rafael.

Discussion.

2:40—**Prognosis of Language Disabilities**—J. Ray Van Meter, M.D., San Francisco, and Ruth W. Van Meter, M.A., San Francisco, by invitation.

Discussion by J. M. Nielsen, M.D., Los Angeles.

3:10—**Hyperinsulinism (Pancreatic Adenoma) Associated with Neuromuscular Disorders**—Ralph W. Barris, M.D., La Jolla.

Discussion.

3:40—**Unilateral Deafness from Pontine Lesion**—J. M. Nielsen, M.D., Los Angeles; and J. Sloan Berryman, M.D., Beverly Hills, by invitation.

Discussion.

4:10—**The Surgical Treatment of Infantile Hydrocephalus**—Tracy J. Putnam, M.D., Beverly Hills.

Discussion by Carl W. Rand, M.D., and Frank M. Anderson, M.D., Los Angeles.

PUBLIC HEALTH

J. B. Askew, M.D., San Diego, *Chairman*
John R. Philp, M.D., Chico, *Secretary*
Charles E. Smith, M.D., Berkeley, *Assistant Secretary*

J. B. ASKEW
Chairman

JOHN R. PHILP
Secretary

TUESDAY, APRIL 29

2:00—Conference Room 2, Biltmore Hotel

2:00—**Congenital Syphilis in California**—A. Frank Brewer, M.D., and Philip Condit, M.D., Berkeley.
Discussion.

2:30—**The Preventable Diseases—The Scope of Public Health**—Haven Emerson, M.D., New York, N. Y., by invitation.
Discussion.

3:00—**Recess.**

3:15—**Diabetes Detection Combined with a Chest X-Ray Survey**—B. K. Milmore, M.D., Berkeley, by invitation; Howard B. Flanders, M.D., Walnut Creek, and Henrik L. Blum, M.D., Martinez.
Discussion.

3:45—**Bronchogenic Carcinoma in San Diego County**—Ambrose S. Churchill, M.D., San Diego.
Discussion.

4:15—**Chairman's Address**—J. B. Askew, M.D., San Diego.

4:35—**Business Meeting—Election of Officers.**

WEDNESDAY, APRIL 30

9:30—Music Room, Biltmore Hotel

Joint Meeting with Section on General Practice

Symposium

Poliomyelitis

9:30—**The Relationship Between Immunizing Injections and Paralytic Poliomyelitis** — Robert Drake, M.D., Berkeley, by invitation.

9:50—**Possible Home Treatment of Poliomyelitis**—Martin Mills, M.D., Richmond.

10:10—**The Role of the Small Hospital in the Treatment of Poliomyelitis** — Edward B. Shaw, M.D., and H. E. Thelander, M.D., San Francisco.

10:30—**Recess.**

10:50—**Tonsillectomy and Ear, Nose and Throat Surgery and Their Effect on the Incidence of Poliomyelitis** — Alden H. Miller, M.D., Los Angeles.

11:10—**Panel Discussion:** Questions from the Floor.
Panel Discussants: Robert Drake, M.D., Martin Mills, M.D., Edward B. Shaw, M.D., and Alden H. Miller, M.D.

Admission to Sessions and Exhibits by Registration Badge Only

RADIOLOGY

Harold P. Tompkins, M.D., Los Angeles, *Chairman*
Robert K. Arbuckle, M.D., Oakland, *Secretary*
Calvin L. Stewart, M.D., San Diego, *Assistant Secretary*

HAROLD P. TOMPKINS
Chairman

ROBERT K. ARBUCKLE
Secretary

MONDAY, APRIL 28

9:30—Auditorium, Sunkist Building

Joint Meeting with Sections on General Surgery and General Medicine

For Program, see Section on General Medicine.

TUESDAY, APRIL 29

9:30—Conference Room 9, Biltmore Hotel

9:30—**Lesions Simulating Carcinoma of the Colon**—H. R. Morris, M.D., Redlands.

9:50—**The Value of Delayed Films in Bronchography**—Herbert L. Abrams, M.D., and Gerhard R. Hencky, M.D., San Francisco.

10:10—**Roentgen Diagnosis of Retroperitoneal Tumors in Children** — Howard L. Steinbach, M.D., and Reynold F. Brown, M.D., San Francisco.

10:30—**Review of 1,000 Cases of Enlarged Thymus Treated by Irradiation** — John D. Lawson, M.D., and E. Revere Cole, M.D., Sacramento.

10:50—**Recess—Business Meeting.**

11:00—**Annual Meeting of Pacific Roentgen Society.**

WEDNESDAY, APRIL 30

9:30—Room 9, Biltmore Hotel

9:30—**Ameloblastoma** — Frank C. Binkley, M.D., Pasadena.

9:50—**Irradiation Therapy of Vascular Nevi**—Roy W. Johnson, M.D., Los Angeles.

10:10—**Hemangioma: To Treat or Not to Treat**—Sydney F. Thomas, M.D., and Esther B. Clark, M.D., Palo Alto.

10:30—**Radiation Therapy of Eye Diseases**—Robert Stanton Sherman, Jr., M.D., San Francisco.

10:50—**Recess.**

11:00—**The Metabolic Behavior of Astatine and Its Destructive Effect Upon the Thyroid in Experimental Animals** — Joseph G. Hamilton, M.D., Berkeley, by invitation.

11:20—**Chairman's Address—Primary Carcinoma of the Duodenum**—Harold P. Tompkins, M.D., Los Angeles.

11:40—**Roentgen Diagnosis of Meningiomas** — Eugene P. Pendergrass, M.D., Philadelphia, Pennsylvania, by invitation.

Bring Proper Identification for Registration

UROLOGY

Donald R. Smith, M.D., San Francisco, *Chairman*
Roger W. Barnes, M.D., Los Angeles, *Secretary*
James A. May, M.D., San Diego, *Assistant Secretary*

DONALD R. SMITH
Chairman

ROGER W. BARNES
Secretary

TUESDAY, APRIL 29

9:30—Music Room, Biltmore Hotel

Joint Meeting with Section on Obstetrics and Gynecology

9:30—**The Urinary Tract in Carcinoma of the Female Genitalia** — Charles A. Gallup, M.D., Pasadena.

Discussion opened by Ralph J. Thompson, M.D., Los Angeles.

10:00—**What's New in Infertility**—Murray Russell, M.D., Beverly Hills, and Emil J. Krahulik, M.D., Los Angeles.

Discussion opened by Lewis Michelson, M.D., San Francisco.

10:30—**Etiologic Factors in Female Stress Incontinence**—J. G. Moore, M.D., Los Angeles.

Discussion opened by Henry M. Weyrauch, M.D., San Francisco.

11:00—**Urethral Diverticula in the Female**—R. Theodore Bergman, M.D., Los Angeles.

Discussion opened by Harry A. Zide, M.D., Beverly Hills.

11:30—**The Use and Abuse of Antibiotics in Gynecological and Urological Diseases**—Arnold F. Settlage, M.D., Los Angeles; and Stanley H. Moulton, M.D., Los Angeles, by invitation.

Discussion opened by A. M. McCausland, M.D., Los Angeles.

WEDNESDAY, APRIL 30

9:30—Conference Room 5, Biltmore Hotel

9:30—**Recurrent Urinary Tract Infection from Urethral Stenosis in Young Girls**—John W. Schulte, M.D., San Francisco, and Gordon Williams, M.D., Menlo Park.

10:00—**The Retropubic Approach to Vesical Neck Obstruction in Children**—Bradford W. Young, M.D., San Francisco.

Discussion of papers by Drs. Schulte and Young to be opened by Samuel K. Bacon, M.D., Hollywood.

10:30—**The Chronically Congested Prostate**—Stanley E. Farley, M.D., Riverside.

Discussion opened by Carl F. Rusche, M.D., Hollywood.

11:00—**Mullerian Duct Remnants**—Vincent Moore, M.D., San Diego, by invitation, and Robert J. Prentiss, M.D., San Diego.

Discussion opened by Earl F. Nation, M.D., Pasadena.

11:30—**The Diagnosis and Treatment of Carcinoma of the Prostate**—Joseph C. Presti, M.D., San Francisco.

Discussion opened by Willard Goodwin, M.D., Los Angeles.

WEDNESDAY, APRIL 30

2:00—Conference Room 5, Biltmore Hotel

2:00—**Chairman's Address: The Treatment of Hypospadias**—Donald R. Smith, M.D., San Francisco.

2:30—**Urography as a Test of Urinary Tract Function**—Eugene P. Pendergrass, M.D., Philadelphia, Pennsylvania, by invitation.

Discussion opened by Elmer Belt, M.D., Los Angeles.

3:00—**The Management of the Patient with Ureteral Calculi**—Ector Le Duc, M.D., San Diego.

Discussion opened by Milo Ellik, M.D., Long Beach.

3:30—**Transvesical Repair of Complicated Vesicovaginal Fistulae** — Franklin Farman, M.D., Whittier; Leslie Kamens, M.D., and James Holloway, M.D., both by invitation, Whittier.

Discussion opened by Edward W. Beach, M.D., Sacramento.

4:00—**Business Meeting and Election of Officers.**

ANNUAL GOLF TOURNAMENT

The Annual Golf Tournament will be held at the Wilshire Country Club, Tuesday afternoon, April 29. All members attending the meeting are welcome to play. Numerous prizes will be awarded. No reservations are necessary. The Golf Club would like members to tee off by twelve o'clock. For information contact W. L. Roberts, M.D.. Secretary, Southern California Medical Golf Association, 727 West Seventh Street, Los Angeles; telephone TUcker 2417.

EMERGENCY CALLS

Notify your office or exchange regarding the meetings you plan to attend. In cases of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, DUnkirk 7-7175; Sunday and evenings after 5:00 p.m., DUnkirk 7-8141.

Motion Picture Program

ARTHUR E. SMITH, M.D., D.D.S., Los Angeles, *Chairman*

Medical Motion Pictures Committee

SURGICAL FILM EXHIBITION

SUNDAY, APRIL 27

1:00 to 5:26 p.m., Biltmore Hotel, Conference Room 1

1:00—**Examination of the Breast for Early Cancer**—State of California Department of Public Health; Cancer Commission, California Medical Association.

1:15—**Thymectomy for Myasthenia Gravis**—W. H. Snyder, Jr., M.D., and S. Austin Jones, M.D., Los Angeles.

1:25—**Curare, Intocostrin, d-Tubocurarine Chloride, Mecostrin**—John B. Dillon, M.D., San Gabriel (A Squibb medical film).

1:50—**Pneumonectomy for Bronchogenic Carcinoma**—Lyman A. Brewer, M.D., and Frank Dolley, M.D., Los Angeles.

2:10—**Cholecystojejunostomy**—Philip Thorek, M.D., Chicago.

2:25—**Pulmonary Valvulotomy** — John C. Jones, M.D., Los Angeles.

2:40—**Right Colon Resection with End-to-End Anastomosis**—Howard H. Drake, M.D., Los Angeles.

2:55—**Thoracic Repair of Diaphragmatic Hernia**—Conrad J. Baumgartner, M.D., Beverly Hills.

3:20—**Radical Neck Dissection**—Frank H. Lahey, M.D., Boston.

3:38—**Repair of a Postoperative Ventral Hernia**—Kenneth C. Sawyer, M.D., and J. Robert Spencer, M.D., Denver.

3:59—**Resection of Right Colon**—Arthur W. Allen, M.D., Boston.

4:14—**Technic of Vaginal Hysterectomy**—Virgil S. Counsellor, M.D., Rochester, Minnesota.

4:41—**Bilateral Femoral Vein Interruption**—Robert R. Linton, M.D., Boston.

5:08—**Subdermal Hematoma**—J. Rudolph Jaeger, M.D., Philadelphia.

MONDAY, APRIL 28

9:00 a.m. to 5:33 p.m., Biltmore Hotel, Conference Room 1

9:00—**Repair of Ruptured Membranous Hernia**—United States Army.

9:08—**Temporomandibular Joint Dysfunction** — S. Daniel Seldin, M.D., D.D.S., New York City.

9:28—**Abdomino-Perineal Resection of Rectum** — Francis C. Newton, M.D., and J. Engelbert Dunphy, M.D., Boston.

10:00—**Surgical Anatomy of the Female Perineum (Cadaver Surgery)**—R. Theodore Bergman, M.D., Roger W. Barnes, M.D., Los Angeles; Elton L. Morel, M.D., Glendale.

10:30—**Antabuse in the Treatment of Alcoholism**—A. E. Bennett, M.D., and Eugene A. Hargrove, M.D., Berkeley.

10:47—**Precancer Diagnosis of the Cervix by Cytology**—J. Ernest Ayre, M.D., Montreal, Canada.

11:12—**Removal of Magnetic Foreign Bodies from the Eye**—United States Army.

11:26—**Polyps of the Large Intestines**—Hilger Perry Jenkins, M.D., and Associates, Chicago.

11:51—**Hypertension Due To Pheochromocytoma** — Reginald H. Smithwick, M.D., Boston.

12:06—**Use of Artificial Kidney**—John P. Merrill, M.D., Boston.

12:21—**Tic Douloureux — Its Diagnosis and Treatment**—J. Rudolph Jaeger, M.D., Philadelphia.

12:54—**Low Spinal (Modified Saddle-Block) Anesthesia in Obstetrics**—William J. Dieckman, M.D., M. Edward Davis, M.D., and George J. Andros, M.D., Chicago (A Ciba medical film).

1:12—**The Physiologic Basis for the Action of ACTH in Human Beings**—Armour Laboratories, Chicago.

1:57—**Total Abdominal Hysterectomy; Bilateral Salpingo-Oophorectomy** — Douglas Donath, M.D., Pasadena.

2:12—**Surgical Approaches to the Knee Joint** — LeRoy C. Abbott, M.D., San Francisco.

2:52—**Diabetic Gangrene**—Walter Scott, M.D., Hollywood.

3:12—**Amputations for Trauma** — Paul F. Olson, M.D., North Hollywood.

3:22—**Surgical Preparation of the Mouth for Immediate Dentures** — Ralston I. Lewis, M.D., D.D.S., Chicago.

3:38—**The Anesthesiologist Positions the Patient**—Nevin H. Rupp, M.D., and Robert M. Campbell, M.D., Veterans Hospital, Los Angeles.

3:53—**Reconstructive Plastic Surgery of the Nose**—Arthur E. Smith, M.D., D.D.S., Los Angeles.

4:23—**Watkins-Wertheim Interposition Operation**—Bernard J. Hanley, M.D., Dept. of Obstetrics and Gynecology, University of Southern California, Los Angeles.

4:35—**Studies of the Coronary Circulation**—Myron Prinzmetal, M.D., Eliot Corday, M.D., H. C. Bergman, Ph.D., Lois L. Schwartz, M.D., and Ramon J. Spritzler, M.D., Beverly Hills.

5:05—**Thyroidectomy for Papillary Carcinoma of Thyroid**—George Crile, Jr., Cleveland.

5:23—**Operation for Varicocele** — United States Army.

TUESDAY, APRIL 29

9:00 a.m. to 5:21 p.m., Biltmore Hotel, Conference Room 1

9:00—Transduodenal Exploration of Common Duct and Sphincter of Oddi—Philip Thorek, M.D., Chicago.

9:14—Abdominal Fascial Transplants — Charles L. Lowman, M.D., Los Angeles.

9:44—Transplantation of Ureters into Rectosigmoid and Cystectomy for Carcinoma of Bladder—Charles C. Higgins, M.D., Cleveland.

10:10—Parotidectomy—Robert A. Wise, M.D., Portland, Oregon.

10:36—Inguinal Hernia Repair — John C. Rooney, M.D., Santa Monica.

10:48—Patellectomy—Paul E. McMaster, M.D., Beverly Hills.

11:08—Transthoracic Repair of Traumatic Diaphragmatic Hernia—H. E. Schiffbauer, M.D., Los Angeles.

11:23—Trigeminal Neuralgia — Rupert B. Raney, M.D., Los Angeles.

11:35—Supraomohyoid Neck Dissection for Removal of Cervical Lymph Node Metastases Following Operation for Carcinoma of the Lip—Grantley W. Taylor, M.D., Boston.

11:48—Abdomino-Perineal Resection for Carcinoma of the Rectum—Richard B. Cattell, M.D., Boston.

12:07—Congenital Absence of Vagina — Virgil S. Counsellor, M.D., Rochester, Minnesota.

12:24—The Surgical Preparation of the Mouth for Dentures—V. H. Kazanjian, M.D., D.D.S., Boston.

12:39—Anomalies of the Bile Duct-Blood Vessels and Strictures of the Common Duct—Warren H. Cole, M.D., Chicago (Produced for Motion Picture Program), American College of Surgeons.

12:55—Sympathetic Nerve Block — United States Army.

1:10—Splenorenal Anastomosis for Portal Hypertension—C. Stuart Welch, M.D., Boston.

1:29—Total Hysterectomy—William H. Brownfield, M.D., Los Angeles.

1:44—Osteochondromatosis of Joints and Bursae—Hugh Toland Jones, M.D., Los Angeles.

1:59—Diverticulum of the Female Urethra—Charles M. Stewart, M.D., Los Angeles.

2:17—Thoracolumbar Sympathectomy—J. Norman O'Neill, M.D., Los Angeles.

2:34—Pulsion Diverticulum of the Hypopharynx (Esophagus) — Harold Lincoln Thompson, M.D., Los Angeles.

2:49—Utero-Sigmoidostomy — Carl Rusche, M.D., Los Angeles.

3:04—Peritoneoscopy—R. Nichol Smith, M.D., Los Angeles.

3:18—A New Surgical Approach for the Correction of Congenital Retrusion of the Mandible: Congenital Undeveloped Symphysis; Acquired Deformity of Palate with Marked Protrusion of the Upper Alveolar Arch and Teeth — Marsh Robinson, D.D.S., M.D., Los Angeles.

3:43—Total Hysterectomy Technique and Safeguards—John M. Fernald, M.D., Los Angeles.

3:58—Removal of Submaxillary Gland for Chronic Inflammation—E. Eric Larson, M.D., Los Angeles.

4:13—Surgical Management of Chiasmal Lesions Producing Progressive Loss of Vision — C. Hunter Shelden, M.D., Pasadena.

4:33—Pseudopancreatic Cyst—Finis G. Cooper, M.D., Huntington Park.

5:03—The Dynamics of Phakoerysis—David O. Harrington, M.D., San Francisco.

TUESDAY EVENING, APRIL 29

7:00 p.m. to 10:55 p.m., Biltmore Hotel, Conference Room 1

7:00—Myomectomy and Myometrial Reconstruction —A. R. Abarbanel, M.D., Los Angeles.

7:30—Demonstrating a New Technique for the Repair of the Fibular Collateral Ligament—John R. Black, M.D., Los Angeles.

7:50—Surgical Approach to the Kidney Through the Superior Lumbar Triangle — Elmer Belt, M.D., Los Angeles.

8:20—The Importance of Early Adequate Surgery in Carcinoma of the Breast: Results in a Case of Late Radical Surgical and Hormone Management—Louis C. Bennett, M.D., Los Angeles.

8:37—Plastic Surgical Reconstruction of Tissues Lost From Physical Injuries. Extensive Skin Grafting and Treatment—Arthur E. Smith, M.D., D.D.S., Los Angeles.

9:10—Excision of Thyroglossal Cyst — Conrad J. Baumgartner, M.D., Beverly Hills.

9:32—Recurrent Dislocation of the Shoulder, a Modification of the Magnuson Procedure—William Molony, Jr., M.D., Los Angeles.

9:46—Radical Groin Dissection for Malignant Melanoma—Jack M. Farris, M.D., Los Angeles.

10:03—Correction of Congenital Ear Canal Atresia with Replacement of Hearing—Howard P. House, M.D., Los Angeles.

10:28—Gelfoam in Surgery—United States Army.

WEDNESDAY, APRIL 30

9:00 a.m. to 4:57 p.m., Biltmore Hotel, Conference Room 1

9:00—Keratoplasty—Ramon Castroviejo, M.D., New York City.

9:17—Transthoracic Partial Gastrectomy with Intrathoracic Esophago-Gastric Anastomosis for Carcinoma of the Cardia—Richard H. Sweet, M.D., Boston.

9:45—First Aid Treatment of Fractures of Lower Extremity—Kellogg Speed, M.D., Chicago.

9:57—Cerebral Hemispherectomy—Herbert G. Crockett, M.D., Los Angeles.

10:22—Replacement Arthroplasty with Judet Prosthesis Using the Gibson Approach—Stanley S. Haft, M.D., Los Angeles.

10:34—Implantation for Enucleation — Clarence H. Albaugh, M.D., Los Angeles.

10:54—Procto-Sigmoidoscopic Findings—David Miller, M.D., Los Angeles.

11:07—One-Stage Mammaryplasty with Free Transplantation of the Nipples — William Milton Adams, M.D., Memphis.

11:27—Excision Anal Fissure, Fistulectomy and Hemorrhoidectomy with Caudal Anesthesia—Neil Swinton, M.D., and Urban Eversole, M.D., Boston.

11:58—Surgical Correction of Prognathism—George F. Seeman, D.D.S., Nashville.

12:14—Correction of Protruding Ears — Oscar J. Becker, M.D., Chicago.

12:30—Reduction of Zygomatic Fracture—Victor H. Frank, D.D.S., Philadelphia.

12:40—Pentothal in Oral Surgery—W. C. Guralnick, M.D., D.M.D., Boston.

1:00—Treatment of Varicose Veins — Thomas A. Shallow, M.D., Philadelphia.

1:18—Wardill Type of Push-Back Operation for Cleft Palate—Gordon B. New, M.D., Rochester, Minnesota.

1:31—Surgery for Hypersplenism—Robert M. Zollinger, M.D., Columbus, Ohio.

1:53—Moles and Melanoma of the Skin — United States Navy.

2:07—Plastic Surgical Reconstruction of Cleft Lip —James F. Dowd, M.D., St. Louis.

2:21—Surgical Management of Primary Hyperthyroidism—Frank H. Lahey, M.D., Boston.

2:43—Removal of a Mandibular Radicular Cyst — Leonard Z. Lyon, D.D.S., Los Angeles.

3:03—Thoracolumbar Sympathectomy for Hypertension—James L. Poppen, M.D., Boston.

3:33—Management of Abdominal Colostomies — United States Army.

3:57—Correction of Facial Paralysis by Muscle Substitution — William Milton Adams, M.D., Memphis.

4:15—Surgical Correction of Nasopharyngeal Atresia, Complete—Arthur Dick, D.D.S., M.D., Washington.

4:27—Cardiac Arrhythmias—Department of Physiology, University of Chicago.

Scientific Exhibits

Renaissance Room and Galeria, Biltmore Hotel

• *Renaissance Room*

Plastic Embedding of Medical Teaching Material—Joseph A. Weinberg, M.D.; and James L. Kerns, Long Beach, by invitation; and Charles F. Bridgman, Los Angeles, by invitation.

Double Contrast Media Arthrography—Leon O. Parker, M.D., and Alfred A. de Lorimier, M.D., San Francisco.

Pulmonary Tuberculosis—Fundamentals of Therapy —E. W. Hayes, M.D., Monrovia; A. A. Adames, M.D., Holtville; L. S. Jacobs, M.D., Monrovia; E. W. Hayes, Jr., M.D., Long Beach, by invitation; and Vernon Rickard, M.D., Holtville.

The Diagnosis of Malignant Melanoma—Molleurus Couperus, M.D., and Rufus C. Rucker, M.D., Los Angeles.

Transvesical Repair of Complicated Vesico-Vaginal Fistula—Franklin Farman, M.D., Whittier; Leslie Kamens, M.D., and James W. Holloway, M.D., Whittier, both by invitation.

• *Renaissance Room*

Thyroxine Synthesis—A Clinical Measure of Thyroid Function—M. E. Morton, M.D., Los Angeles, by invitation.

Correlative Study of Cardiac Diseases—Irving Treiger, M.D., Beverly Hills.

Treatment of Peripheral Arterial Insufficiency—Albert Fields, M.D., and W. A. Selle, Ph.D., by invitation, Los Angeles.

• *Galeria*

Tests for Intoxication — Joseph B. Davis, M.D., Oceanside.

Psychiatric Art Therapy—Brunon Bielinski, M.D., Los Angeles, and Oletha Paul Fowler, by invitation, Los Angeles.

Plastic Surgery Problems in Children—Kathryn L. Stephenson, M.D., Santa Barbara.

Diagnosis of Complete Transposition of Great Vessels —Herbert L. Abrams, M.D., San Francisco.

Plastic Gastrointestinal Tubes in Diagnosis, Treatment and Postoperative Management—Arthur L. Kaslow, M.D., and William F. Quinn, M.D., Los Angeles.

Organizational Exhibits

Galeria, Biltmore Hotel

C.M.A. Postgraduate Activities Committee

C.M.A. Blood Bank Commission

American Cancer Society

U. S. Food and Drug Administration

American Physical Therapy Association, Northern California Chapter

C. M. A. Cancer Commission Pre-Convention Conference

LOS ANGELES—SATURDAY, APRIL 26

The pre-convention conferences sponsored by the Cancer Commission will be held on Saturday, April 26, the day preceding the opening of the California Medical Association meeting, at the Biltmore Hotel and in the Auditorium of the Los Angeles County Medical Association.

Pathology

Auditorium, Los Angeles County Medical Association Building,
1925 Wilshire Boulevard

The pre-convention Conference on Microscopic Tumor Pathology will be held from 9:30 a.m. to 12 noon and from 2 to 4 p.m. under the chairmanship of Dr. James E. Kahler, Los Angeles. Dr. James W. Kernohan, head of the Section on Pathologic Anatomy and Neuropathology, Mayo Clinic, Rochester, Minnesota, will be the moderator. Tumor diagnostic problems will be presented and discussed with emphasis on tumors of the central nervous system. Members who attend this conference are requested to register now with Dr. E. M. Hall, Tumor Tissue Registry, C.M.A. Cancer Commission, Los Angeles County General Hospital, 1200 No. State Street, Los Angeles 33.

Radiology

Conference Room 1, Biltmore Hotel

The pre-convention Conference on Radiology will be held from 9:30 a.m. to 12 noon and from 2 p.m. to 4:30 p.m. under the chairmanship of Dr. Merrell A. Sisson of San Francisco. Dr. J. F. Linsman of Beverly Hills is Secretary.

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SCIENTIFIC SESSIONS

	SUNDAY APRIL 27 A.M.	SUNDAY APRIL 27 P.M.	MONDAY APRIL 28 A.M.	MONDAY APRIL 28 P.M.	TUESDAY APRIL 29 A.M.	TUESDAY APRIL 29 P.M.	WEDNESDAY APRIL 30 A.M.	WEDNESDAY APRIL 30 P.M.
BILTMORE THEATRE		**3:00** General Meeting		**2:00** General Meeting and Clinical-Pathological Conference				
BILTMORE HOTEL Music Room	**9:30 House of Delegates**		**9:30** General Practice Anesthesiology	**2:00** Dermatology and Syphilology Pediatrics	**9:30** Obstetrics and Gynecology Urology	**1:30 House of Delegates**	**9:30** Public Health General Practice	**1:30** General Medicine General Surgery Calif. Heart Assn.
Conference Room 2			**9:30** Dermatology and Syphilology	**2:00** General Practice		**2:00** Public Health		
Conference Room 4			**9:30** Industrial Medicine and Surgery	**2:00** Anesthesiology			**9:30** Allergy	**2:00** Allergy
Conference Room 5			**9:30** Pathology and Bacteriology	**2:00** Pathology and Bacteriology	**9:30** Industrial Medicine and Surgery		**9:30** Urology	**2:00** Urology
Conference Room 8			**9:30** Eye, Ear, Nose and Throat	**2:00** Eye, Ear, Nose and Throat			**9:30** Psychiatry and Neurology	**2:00** Psychiatry and Neurology
Conference Room 9					**9:30** Radiology		**9:30** Radiology	
BAPTIST CHURCH Chapel Fifth and Olive Sts.					**9:30** General Practice		**9:30** Obstetrics and Gynecology	
SO. CALIFORNIA EDISON BLDG. Fifth and Grand Sts.			**9:30** Pediatrics		**9:30** General Surgery		**9:30** General Surgery	**2:00** Pediatrics
SUNKIST BUILDING Fifth and Flower Sts.			**9:30** General Medicine General Surgery Radiology		**9:30** General Medicine		**9:30** General Medicine	**2:00** Obstetrics and Gynecology
BILTMORE HOTEL Conference Room 1		**1:00-5:30 p.m. Medical Motion Pictures**	**9:00 a.m. to 5:30 p.m. Medical Motion Pictures**		**9:00 a.m. to 5:30 p.m. Medical Motion Pictures 7:00 p.m. to 11:30 p.m.**		**9:00 a.m. to 4:30 p.m. Medical Motion Pictures**	

COUNCIL OF THE C.M.A. MEETS DAILY AT 7:30 A.M. IN CONFERENCE ROOM 6, BILTMORE HOTEL

SCIENTIFIC EXHIBITS—RENAISSANCE ROOM AND GALERIA, BILTMORE HOTEL

HOUSE OF DELEGATES MEETS SUNDAY, 9:30 A.M., AND TUESDAY, 1:30 P.M.

TECHNICAL EXHIBITS—BALLROOM, BALLROOM FOYER, RENAISSANCE ROOM, AND GALERIA ROOM, BILTMORE HOTEL

WOMAN'S AUXILIARY

to the

CALIFORNIA MEDICAL ASSOCIATION

Twenty-Second Annual Convention, April 27-29, 1952

Headquarters: Biltmore Hotel, Los Angeles

MRS. STANLEY R. TRUMAN
President

MRS. RALEIGH W. BURLINGAME
President-Elect

Convention Chairman: MRS. E. VINCENT ASKEY

REGISTRATION

Sunday, April 27—9:00 a.m. to 4:00 p.m.
Monday, April 28—8:30 a.m. to 4:00 p.m.
Tuesday, April 29—8:30 a.m. to 12 noon

SUNDAY, APRIL 27

8:00 a.m.—Executive Committee Meeting, President's Suite, Biltmore Hotel.

10:00 a.m. — Pre-Convention Board Meeting, Conference Room 5, Biltmore Hotel.

3:00 p.m.—Opening Session of the California Medical Association. Report of the year's work of the Woman's Auxiliary by the President, Mrs. Stanley R. Truman. All Auxiliary members and doctors' wives are invited to attend. Biltmore Theatre.

MONDAY, APRIL 28

9:30 a.m.—First General Session of the Twenty-second Annual Convention, Ballroom, Alexandria Hotel, 210 West Fifth Street. Mrs. Stanley R. Truman, President, presiding.

4:00 - 6:00 p.m.—Reception, honoring Mrs. H. Gordon MacLean, wife of the President of the California Medical Association. All doctors' wives and their husbands are invited. Rendezvous Room, Biltmore Hotel.

7:30 p.m.—California Medical Association dinner and dance, honoring the President, Dr. H. Gordon MacLean. Biltmore Bowl, Biltmore Hotel.

TUESDAY, APRIL 29

9:00 a.m.—Second General Session of the Twenty-second Annual Convention, Ballroom, Alexandria Hotel. Mrs. Stanley R. Truman, President, presiding.

1:00 p.m.—Luncheon, honoring Mrs. Stanley R. Truman, Mrs. Raleigh W. Burlingame, the State Advisory Board and Past State Presidents. Cocoanut Grove, Ambassador Hotel, 3400 Wilshire Boulevard.

3:30 p.m.—Post-Convention Board meeting, Conference Room 5, Biltmore Hotel. Mrs. Raleigh W. Burlingame, presiding.

Technical Exhibits

The Association is again fortunate in having a record number of technical exhibits, this year covering an even greater variety of products and services than ever before.

Exhibits will be located in the Ballroom and Foyer, at the south end of the Galeria, in the Renaissance Room at the north end, and in the Galeria Room, which can be entered from both the main Galeria and the north Galeria opposite the Music Room.

Among the technical exhibits on display will be the newest developments in pharmaceuticals and biologicals, in services for physicians and in allied fields of value to all. Each exhibitor has been careful to send selected personnel to the meeting, to insure the most competent display and explanation of all goods and services.

All those registered at the meeting are welcome in the exhibit rooms. Time spent there will be time well spent, both for the gathering of new information and for supplementing the scientific knowledge from the scientific sessions.

Ample time has been provided between scientific sessions to permit all registrants to visit the exhibits. Please do so, for your own sake primarily but likewise to show your appreciation for these exhibitors, whose contributions make this meeting possible each year.

A list of exhibitors and their displays is given below.

Room and Booth No.

ABBOTT LABORATORIES **Ballroom Foyer—3, 4**
North Chicago, Illinois

Abbott will present two animated exhibits—one on DAYALETS, a tablet containing eight synthetic vitamins, plus vitamin B_{12}; the other on ABBOCILLIN 800M, which offers 800,000 units of penicillin per cc. The DAYALETS exhibit shows *Mr. Fishy Taste* waving goodbye from a box car to illustrate the absence of fish-oil taste, burp and allergic reactions in that product. In the ABBOCILLIN 800M exhibit, a moving line shows the high initial peak obtained from a single 1-cc. dose, followed by sustained blood levels for a 48-hour period.

A. S. ALOE COMPANY **Ballroom Foyer—2**
Los Angeles

Steeline examining and treatment room furniture will be on display, as well as the Aloe line of Physical Therapy Equipment, bearing the approval of the Council on Physical Therapy of the American Medical Association.

The latest instruments of interest to the Physician and Surgeon will also be available for your inspection.

AMES COMPANY, Inc. **Ballroom—29**
Elkhart, Indiana

The Ames DIAGNOSTIC KIT will be featured. This small kit, measuring 3 x 9 inches, contains CLINITEST—a test for urine-sugar, BUMINTEST—a test for albumin, ACETEST—a test for acetone, and HEMATEST—a test for occult blood. No extra reagents, equipment or accessories are needed. This kit is designed for the physician's office, small laboratory, hospital floor use, etc. The Ames representatives will be demonstrating these tests.

Ames Company representatives will be glad to discuss DECHOLIN and DECHOLIN SODIUM, the standard hydrocholeretic agents for the treatment of biliary tract diseases.

THE ARMOUR LABORATORIES
Chicago, Illinois **Galeria Room—99**

You are cordially invited to attend The Armour Laboratories Exhibit where our representatives will be pleased to discuss with you ACTHAR GEL, The Armour Laboratories' brand of Adrenocorticotropic hormone; TRYPTAR; the Armatinic Products; the Crystamin products; and Thyroid.

Room and Booth No.

AYERST, McKENNA & HARRISON, Ltd.
New York, New York **Ballroom—49**

Physicians attending the California Medical Association convention are cordially invited to visit the Ayerst booth. Our representatives will be happy to answer your inquiries relative to "Antabuse" or other Ayerst specialties.

BABY DEVELOPMENT CLINIC
Chicago, Illinois **Galeria Room—96**

Baby Development Clinic presents the psychological and emotional aspects of early infant feeding in visual as well as printed form. Ideal for use of doctors, nurses, teachers and others who are in contact with expectant parents, medical students or nurses in training. *Maternity Counselling Service* . . . a courtesy service available to doctors for their maternity patients . . . relieves doctors of discussing layette needs and other preparations for home and baby. No charge or obligation to either doctor or patients. Supported by firms included in exhibit.

THE BAKER LABORATORIES, Inc.
Cleveland, Ohio **Ballroom Foyer—15**

Baker's Modified Milk (liquid and powder) and Varamel (liquid) are made from Grade A Milk (U. S. Public Health Service Milk Code) which has been modified by replacement of the milk fat with vegetable and animal fats, and by the addition of vitamins and iron.

Baker's Modified Milk is a completely prepared formula, including the carbohydrate, and only water needs to be added.

Varamel is a formula base to be varied by the physician with additions of carbohydrate, and water to meet the exact needs of the individual infant.

For more information, we cordially invite you to visit our booth.

DON BAXTER, Inc. **Ballroom Foyer—10**
Glendale

Well-informed Baxter representatives will discuss several of the newest developments in parenteral therapy. New Baxter intravenous solutions in Vacoliter containers will be displayed. New and special Baxter blood transfusion equipment will be discussed and demonstrated. You'll see the remarkable new Baxter plastic intubation tube and oxygen catheters for greater patient comfort.

Room and Booth No.

BECTON, DICKINSON & CO. **Ballroom—46**
Rutherford, New Jersey

We will have on display a general line of hypodermic syringes and needles, clinical thermometers, diagnostic equipment and Ace Bandages. We will feature the new Dynafit Syringe with clear glass barrel, and the full-footed, full-length Ace Elastic Hosiery.

M. J. BENJAMIN **Renaissance—84**
Los Angeles

M. J. Benjamin will be at Booth No. 84 (near the Fifth Street entrance) to say hello to old friends and to display samples of what we are making these days in the way of trusses, orthopedic appliances, and surgical corsets. Our place of business is right across the Park from the Biltmore Hotel. We occupy the entire Sixth Street side of the fifth floor of the Paramount Theater Building. We welcome you to Los Angeles.

THE BORDEN COMPANY **Ballroom—32**
New York, New York

Borden representatives will be more than pleased to discuss a new powdered infant food with you. BREMIL is a completely modified milk in which nutritionally essential elements of cows' milk have been adjusted to supply the nutritional requirements of infants deprived of human milk. Clinical, x-ray and laboratory evidence with a large group of infants fed exclusively on Bremil proved conclusively its efficacy as an infant food. Bremil is a new phase in infant feeding.

Likewise exhibited will be our long-established products for infant feeding: Biolac, Mull-Soy, Dryco, Beta Lactose, Klim, and Merrell-Soule special milks.

THE BORDEN FOOD PRODUCTS COMPANY
San Francisco **Galeria Room—104**

All Delegates and members are invited to our booth for a refreshing cup of Borden's Pure Coffee.

New, interesting and helpful literature on Borden's Evaporated Milk, and high Protein Starlac will be available.

BOYLE & COMPANY **Ballroom—58**
Los Angeles

This, our Silver Anniversary Year, we will be featuring our well-known Hematinic line; but we will also exhibit Deimal, our multiple vitamin-mineral combination; Boyle Pre Natal line; Opidice, an adjunct in the control of obesity; and the Boyle Antibiotic Sensitivity Testing Sets, all well known to the profession through our professional promotion program.

A. M. BROOKS COMPANY **Galeria Room—105**
Los Angeles

We are happy to again greet our many friends in Booth No. 105 where we are featuring the outstanding diathermy of the year, the RAYTHEON (radar) MICROTHERM. We shall also feature other electro-medical equipment, such as the TECA line of Low Volt equipment, Edin electrocardiograph and encephalograph, Cardiotron electrocardiograph, ADC Audiometers, AMBCO Hearing Amplifiers, Ultrasonic equipment, and many physical therapy items such as Vasculators, Whirlpool Bath, Quartz and Infra Red Lamps, and Foredom Vibrators.

Competent salesmen on hand to demonstrate all equipment.

Room and Booth No.

BROWN & WILLIAMSON TOBACCO CORPORATION **Ballroom Foyer—21**
Louisville, Kentucky **Galeria Room—112**

Members of the California Medical Association are cordially invited to visit the two attractive exhibits of the Brown & Williamson Tobacco Corporation. One exhibit will be devoted to KOOL mildly mentholated cigarettes, America's most refreshing smoke, and the other exhibit to VICEROY filter tip cigarettes. Both brands of cigarettes are of particular interest to the medical profession. Souvenirs will be presented to all members who register at the KOOL and VICEROY booths.

BURROUGHS WELLCOME & COMPANY
Tuckahoe, New York **Renaissance—83**

A UNIQUE ANTIBIOTIC—'AEROSPORIN' brand Polymyxin B Sulfate will be featured. 'Aerosporin' is available in topical, parenteral and oral preparations, and destroys Pseudomonas aeruginosa (B. pyocyaneus) and most other gram-negative bacilli.

'POLYSPORIN' brand Polymyxin B—Bacitracin Ointment will also be displayed. 'Polysporin' contains 10,000 units of 'Aerosporin' (equivalent to 1 mg. of Polymyxin Standard) and 500 units of Bacitracin per gram. It eliminates both gram-negative and gram-positive organisms. 'Polysporin' is especially effective against pyogenic skin infections, it rarely sensitizes and resistance rarely develops.

CAMEL CIGARETTES **Renaissance—64**
New York, New York

CAMEL Cigarettes will feature color slides of background data from their newest research. After weekly examinations of the throats of hundreds of men and women smoking CAMEL Cigarettes exclusively for thirty days, throat specialists reported "Not one single case of throat irritation due to smoking CAMELS."

S. H. CAMP & COMPANY **Renaissance—73**
Jackson, Michigan

S. H. Camp & Company, Jackson, Michigan, will feature the new Camp Varco Pelvic Traction Belt in addition to displaying a complete line of Camp Anatomical Supports for prenatal, postnatal, visceroptosis, sacro-iliac, hernia, and other specific conditions. Experts from the Camp staff will be in attendance to answer questions pertaining to the scientific application of these supports and to advise regarding the availability of them in authorized service departments of stores throughout the country.

ELDON H. CANRIGHT COMPANY, Inc.
Glendale **Galeria Room—103**

All eight of our prescription specialty products, each representing the latest scientific developments in major fields of therapy, will be on exhibit at our booth. Professional descriptive literature will be available and courteous representatives will be present.

CARNATION COMPANY **Ballroom Foyer—26**
Los Angeles

The Carnation Company cordially invites you to visit the Merry-Go-Round exhibit at Booth No. 26. This interesting and unique display shows that Carnation Milk is the first choice for infant feeding. Valuable literature on additional uses of Carnation Vitamin D Evaporated Milk for child feeding and general diet purposes will be available for distribution.

Room and Booth No.

CIBA PHARMACEUTICAL PRODUCTS, Inc.
Summit, New Jersey **Renaissance—60**

Ciba Pharmaceutical Products, Inc., Summit, New Jersey (Booth No. 60), cordially invites you to visit their booth which will feature ITRUMIL, an antithyroid compound with a different mode of therapeutic action in Hyperthyroidism.

Representatives in attendance will be very pleased to discuss this and other Ciba products and to provide you with material for clinical investigation.

THE COCA-COLA COMPANY **Renaissance—61**
Los Angeles

Ice-cold Coca-Cola served through the cooperation and courtesy of the Coca-Cola Bottling Company of Los Angeles and The Coca-Cola Company.

COMMERCIAL SOLVENTS CORPORATION
New York, New York **Galeria Room—97**

CSC Pharmaceuticals, a division of Commercial Solvents Corporation, will feature its new product COMPENAMINE, the new hypoallergenic form of Penicillin. Available to date in five dosage forms: Aqueous suspension in ten dose, one dose, and the disposable syringe; COMPENAMINE in oil in ten dose, and the disposable syringe. Other dosage forms to be added presently. You are cordially invited to visit our booth and discuss these products with our representatives.

CONTINENTAL MEDICAL BUREAU, Agency
Los Angeles **Renaissance—76**

Continental Medical Bureau of Los Angeles in Booth No. 76 invites you to stop by and talk with them regarding any personnel needs in the medical field. Complete data available on general practitioners or Diplomates of Special Boards who seek new locations. See them also if you wish to dispose of equipment or an established practice. Locations recommended. Up to date information on all areas of California as well as on Western and Southwestern States. Information gladly. (Helen Buchan, Director)

CUTTER LABORATORIES **Ballroom Foyer—19**
Berkeley

CUTTER LABORATORIES, Booth No. 19, features immunizing and therapeutic agents for children's diseases. "Alhydrox" absorbed toxoids and combined vaccines, as well as Human Blood Fractions, such as Hypertussis, Immune Serum Globulin, and the new Cutter Albumin Shock Kit, will be on display.

Educational literature for your patients will be available to you.

The complete line of Cutter Saftiflask solutions, including Invert Sugar, and expendable equipment for administration will be shown. Additionally, blood bottles and new all-plastic pressure sets will be on display.

F. A. DAVIS COMPANY **Renaissance—69**
Philadelphia, Pennsylvania

For the first time, before the California Medical Association, there will be displayed the recently completed *Cyclopedia of Medicine, Surgery and Specialties.* It's all new . . . and looseleaf! Also see the medical and scientific textbooks of vital interest in today's practice of medicine.

DESITIN CHEMICAL COMPANY
Providence, Rhode Island **Galeria Room—109**

Desitin Ointment, the pioneer in external cod liver oil therapy, combines crude high potency Norwegian cod liver oil, zinc oxide, and talcum in a modified lanolin petrolatum base. Owing to its content of high natural vitamin A and D concentration and unsaturated fatty acids, Desitin Ointment alleviates pain and relieves itching promptly. It promotes granulation and epithelization. Desitin Ointment is not liquefied at body temperature nor decomposed by secretions. Desitin Ointment forms a perfect protection for the skin. Indications: Postoperative dressings, slow healing wounds, indolent chronic varicose ulcers, burns of all degrees, lacerations, bed sores, hemorrhoids and fissures.

Desitin Powder, a unique, dainty medicinal toilet powder, contains crude cod liver oil, zinc oxide, magnesium oxide and talcum. Uses: As of Desitin Ointment.

DEVEREUX SCHOOLS **Galeria Room—114**
Santa Barbara

Large color photos of the school campus and leather, ceramic and jewelry items made by the children and featured in the Devereux Schools Exhibit.

The Devereux Foundation offers "tailor made" education for children who are unable to adjust themselves in the public schools—either because of emotional, academic or intellectual problems.

In a boarding school setting, the Devereux Schools offer the finest educational and clinical facilities plus an outstanding staff of specialists to assist physicians to meet the needs of their school age patients who are failing in their home communities.

THE DIETENE COMPANY **Renaissance—71**
Minneapolis, Minnesota

Visit our exhibit and examine the Free Diet Service for physicians. The diets are nutritionally well-balanced, easy to follow and made to appear as if they were typed in your office.

MERITENE, the economical and palatable whole protein supplement, and DIETENE, the "Council-Accepted" reducing supplement, will be on display.

DOHO CHEMICAL CORPORATION
New York, New York **Renaissance—70**

Doho Chemical Corporation is pleased to exhibit AURALGAN, the ear medication for the relief of pain in Otitis Media and removal of Cerumen; RHINALGAN, the nasal decongestant which is free from systemic or circulatory effect and equally safe to use on infants as well as the aged; and the NEW OTOSMOSAN, the effective, non-toxic ear medication which is Fungicidal and Bactericidal (gram negative—gram positive) in the suppurative and aural dermatomycotic ears. Mallon Chemical Corporation, subsidiary of the Doho Chemical Corporation, is also featuring RECTALGAN, the liquid topical anesthesia for relief of pain and discomfiture in hemorrhoids, pruritus and perineal suturing.

ENDO PRODUCTS, Inc. **Ballroom Foyer—16**
Richmond Hill, New York

Our staff will be very happy to discuss with our many friends the diversified ENDO line, featuring HYCODAN, the anti-tussive of choice, PERCODAN and NUCODAN, the new analgetics for moderate pain, MESOPIN, the selective antispasmodic, and NORODIN, our psycho-motor stimulant and anti-depressant.

Our booth will be in charge of Mr. H. L. Wellington, our West Coast Branch Manager, and our detail-man who calls on you will be very happy to welcome you to our exhibit.

C. B. FLEET COMPANY, Inc. **Ballroom—51**
Lynchburg, Virginia

C. B. Fleet Co., Inc., cordially invites you to visit Booth No. 51. Increasingly, during the past fifty years, to the

Room and Booth No.

medical profession, sodium phosphate has come to mean Phospho-Soda (Fleet), the pure, stable, aqueous solution of the two U.S.P. sodium phosphates.

ROLAND J. GAUPEL COMPANY
Los Angeles **Renaissance—63**

The Roland J. Gaupel Company's exhibit this year will feature many West Coast manufactured products—a new type treatment table; utility table; folding Pakatable; plastic front illuminator for x-ray; illuminator with drip pan attachment; a film marker which reduces the patient's history to one-fourth regular size, thereby increasing the possibility of more detailed description; laminated x-ray protective screen; two-speed treatment or darkroom timer; automatic RJG cassette holder, and various other items.

GEIGY PHARMACEUTICALS
New York, New York **Galeria Room—115**

The Geigy exhibit will feature TROMEXAN, the new, widely acclaimed, *Council Accepted*, oral anticoagulant that provides more rapid action, shorter effect, and a greater margin of safety than other oral anticoagulants. Also on display will be URAX Cream, a new long-acting, non-sensitizing, antipruritic and scabicide; and PANPARNIT indicated for symptomatic relief of Parkinson's Disease.

GENERAL ELECTRIC COMPANY, X-Ray Department **Ballroom—24**
Milwaukee, Wisconsin

The General Electric Company, X-Ray Department, manufacturers of complete x-ray equipment from portable diagnostic to 2,000,000-volt therapy apparatus — electrocardiograph—diathermy—x-ray accessories and supplies. GE's service is available to you at more than 60 offices throughout the United States and Canada. Why not discuss your particular problems with us?

GERBER PRODUCTS COMPANY **Ballroom—48**
Fremont, Michigan

The GERBER BABY greets physicians and their guests at the California Medical Association meeting. Symbolizing the best in baby foods, he will continue pioneering research in the field of applied infant nutrition. His picture on "Starting" cereals, Strained and Junior foods and Gerber-Armour meats for babies is your assurance of uniform high quality.

JOHN F. GREER COMPANY **Ballroom—55**
Oakland

The John F. Greer Company will feature the Greer Colostomy Compact, a complete post-operative appliance for the colostomy patient. This equipment is the result of 23 years' experience in the exclusive manufacture of colostomy appliances.

Miss Jayne Greer will be at the booth to discuss with doctors any special problems they may have in connection with colostomy equipment.

THE HARROWER LABORATORY, Inc.
Glendale **Galeria Room—98**

The Harrower exhibit will feature Prulose Complex liquid, a new dosage form of moist bulk activated with concentrate of California prunes fortified with a new laxative principle (diacetylhydroxyphenylisatin) which has been identified as the active laxative principle of prunes.

Room and Booth No.

H. J. HEINZ COMPANY **Ballroom—56**
Pittsburgh, Pennsylvania

Stop at the Heinz exhibit for these: Nutritional Data, Nutritional Observatory. Do you need Baby Gift Folders for distribution among your patients? Have you seen the addition to Heinz Baby Food line—Pre-Cooked Barley Cereal? New Junior Foods are Sweet Potatoes, Chocolate Pudding, Butterscotch Pudding, and Macaroni-Tomato-Beef and Bacon.

HOFFMANN-LA ROCHE, Inc. **Ballroom—33**
Nutley, New Jersey

Two exceptionally interesting products will be featured at the Roche exhibit. One product is ASTEROL, a new antifungal drug which is of impressive value in ringworm of the scalp, athlete's foot and other fungus infections of the hair and skin. ASTEROL is available as an ointment, as a tincture, and in powder form. The other product is GANTRISIN, the more soluble sulfonamide which has a wider antibacterial spectrum. GANTRISIN is highly effective in the treatment of systemic and urinary tract infections.

Why not stop at the Roche booth where members of the field staff will be glad to discuss these and other Roche specialties with you.

HOLLAND-RANTOS COMPANY, Inc.
New York, New York **Ballroom—53**

You are cordially invited to inspect the Holland-Rantos display feature: Time-tested Koromex Diaphragms, Jelly, Cream, etc., for dependable conception control; Nylmerate Jelly and adjuvant Nylmerate Solution for effective low-cost treatment of vaginal trichomoniasis, moniliasis, leukorrhea. Representatives will welcome the opportunity to talk with you about H-R products of special interest to you.

IRWIN, NEISLER & CO. **Galeria Room—106**
Decatur, Illinois

Irwin, Neisler and Company is pleased to exhibit at your convention for the first time and hopes that it may be the beginning of a long and pleasant association. We will be calling your attention to DAINITE and VERENTERAL, two new products of research to serve your practice.

LAKESIDE LABORATORIES
Milwaukee, Wisconsin **Galeria Room—116**

Lakeside exhibit will display ethical pharmaceutical specialties deriving from the later developments in medicine. Professional representatives will be on hand to discuss these medications and their use.

LANTEEN MEDICAL LABORATORIES, Inc.
Evanston, Illinois **Ballroom Foyer—18**

Lanteen Medical Laboratories, Inc., extend a cordial invitation to visit their Booth No. 18. Representatives will discuss the improved LANTEEN technique, a dual method of contraception based on the use of LANTEEN Flat Spring Diaphragm and LANTEEN Spermatocidal Jelly.

Two new ethical pharmaceuticals are also being featured: Alkagel, a pioneer antacid which provides prompt and prolonged neutralization of gastric acidity and relief from peptic ulcer; and Vodine, iodine in a special ointment base which makes possible rapid bactericidal action for skin, surface wounds, abrasions, etc., without burning. Samples and literature describing each of these products are available.

Room and Booth No.

LEDERLE LABORATORIES
New York, New York **Ballroom Foyer—12**

You are cordially invited to visit our exhibit in Booth No. 12, where you will find representatives who are prepared to give you the latest information on Lederle products.

LIBBY, McNEILL & LIBBY **Renaissance—66**
San Francisco

You are cordially invited to stop and discuss the merits of Libby's Homogenized Baby Foods and sample Libby's Tomato Juice, which has proved to be so popular at previous meetings.

ELI LILLY AND COMPANY **Ballroom—54**
Indianapolis, Indiana

Your Lilly medical service representative cordially invites you to visit the Lilly exhibit located in Booth No. 54. Featured will be a demonstration of functional packaging as an aid to medical practice. Modern manufacturing departments will be illustrated. Literature on new therapeutic developments will be available.

J. B. LIPPINCOTT COMPANY **Renaissance—81**
Philadelphia, Pennsylvania

J. B. Lippincott presents, for your approval, a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

P. LORILLARD COMPANY **Galeria Room—108**
New York, New York

P. Lorillard Company exhibit will display our leading brands of cigarettes, smoking tobaccos and cigars.

LOV-É BRASSIERE COMPANY
Hollywood **Ballroom—35**

We invite you to inspect our highly specialized line of therapeutic breast supports which enable the physician to prescribe remedial support for specific breast conditions. Each LOV-É Brassiere is custom-fitted inch-by-inch to your patient's personal measurements . . . and in exact accordance with your instructions. Special brassieres for pre-natal, post-partum, atrophic, hypertrophic and mastectomy. LOV-É Corrective Brassieres are available in leading department stores and corset shops through the West. Our representative will be very happy to answer any questions.

M & R LABORATORIES **Galeria Room—113**
Columbus, Ohio

Our representatives for Similac and Cerevim will be most happy to discuss with you the merits and use of our products in the field of infant and child nutrition.

MARLYN COMPANY Inc. **Ballroom—37**
Los Angeles

Marlyn Company Inc. cordially invites you to visit Booth No. 37 where a staff of our representatives will be on hand to furnish information on our products. Test-Estrin, the original product of combined steroid in physiological ratio, will be featured.

Room and Booth No.

THE S. E. MASSENGILL COMPANY
San Francisco **Renaissance—75**

Our exhibit will feature Obedrin tablets and the 60-, 10-70 diet for weight reduction. Also, Khelisem tablets, a highly potent coronary dilator.

McNEIL LABORATORIES, Inc. **Ballroom—43**
Philadelphia, Pennsylvania

Members of the California Medical Association are cordially invited to visit our booth, No. 43, Mr. Hugh A. Harley in charge. Products to be featured are Butisol Sodium, Butisol-Belladonna, Syndrox Hydrochloride, Syntil and Cinbisal.

MEAD JOHNSON & COMPANY **Renaissance—72**
Evansville, Indiana

Mead Johnson & Company will feature Lactum and Dalactum, convenient formulas of evaporated milk containing Dextri-Maltose; three water-soluble vitamin preparations, Poly-Vi-Sol, Tri-Vi-Sol and Ce-Vi-Sol; Fer-In-Sol, a palatable, highly concentrated solution of ferrous sulfate. Also Mulcin, a pleasingly flavored vitamin emulsion, for teaspoonful dosage, as well as four Pablum cereals, including Barley and Rice.

MEDCO PRODUCTS COMPANY
Tulsa, Oklahoma **Galeria Room—110**

The MEDCOTRON Stimulator, for the stimulation of enervated muscle or muscle groups ancillary to treatment by massage, is a low volt generator that will generate plenty of your interest. Electrical muscle stimulation is a valuable form of rehabilitation therapy. Stop by our booth for a personal demonstration.

THE MEDICAL CENTER AGENCY
San Francisco **Ballroom Foyer—5**

This agency offers long experience in filling the needs of Physicians seeking professional affiliations. Interviews are confidential and are given our individual attention.

We are the center of placement activity for physicians and all other medical personnel. "Positions Throughout the West."

THE MEDICAL PROTECTIVE COMPANY
Fort Wayne, Indiana **Ballroom Foyer—14**

Specializing exclusively in professional protection since 1899, The Medical Protective Company provides representation at Booth No. 14 familiar with all the complexities of professional liability by special training and long experience. An answer to your problems in the Doctor-Patient relationship is yours for the asking.

MERCK & CO., Inc. **Galeria—113**
Rahway, New Jersey

MERCK & Co., INC. is featuring CORTONE (Cortisone Merck). Among the conditions in which CORTONE has produced striking clinical improvement are: rheumatoid arthritis and related rheumatic diseases; bronchial asthma; eye diseases including non-specific iritis, iridocyclitis and uveitis; skin diseases including cases secondary to drug reactions. CORTONE is supplied in a saline suspension for parenteral use; in tablets for oral use; and in an ophthalmic suspension and ophthalmic ointment. Representatives at the MERCK booth will be glad to provide information on CORTONE as well as other MERCK medicinal preparations such as Antibiotics, Cobione (Crystalline Vitamin B_{12}), Neo-Antergan, Urecholine Chloride, and Vinethene.

Room and Booth No.

THE WM. S. MERRELL COMPANY
Cincinnati, Ohio **Ballroom—38**

For prompt, effective and comfortable relaxation of gastrointestinal smooth muscle spasm Merrell presents BENTYL Hydrochloride.

BENTYL is a high milligram potency non-narcotic antispasmodic with two-fold musculotropic and neurotropic action. Effective therapeutically without atropine-like side actions in functional gastrointestinal disorders.

BENTYL is particularly suited for prolonged administration without habituation or increased tolerance.

MILLER SURGICAL COMPANY
Chicago, Illinois **Ballroom Foyer—17**

Sole manufacturers of Rudolph V. Gorsch, M.D., illuminated stainless steel rectal scopes. Other items of interest include our electro-scalpel which provides a unit for office, hospital, and out-call use. It is thoroughly practical for all minor and light major surgery and comes complete with monopolar electrodes for cutting, coagulating, desiccating, dehydrating, bloodless biopsies and fulgurating in general work. Also displayed will be a complete line of illuminated and magnifying diagnostic units which have attracted the attention of so many doctors in general practice as well as in special fields.

THE C. V. MOSBY COMPANY
San Francisco **Ballroom Foyer—1**

You will find at the Mosby Booth No. 1, our newest and latest books. Should you be interested in recent medical literature, be sure to "stop by" and look over anything that might be of interest to you.

THE NATIONAL DRUG COMPANY
Philadelphia, Pennsylvania **Ballroom—52**

The National Drug Company, pioneer in the clinical application of resin therapy, will feature RESION, an intestinal adsorbent; RESINAT, a polyamine exchange resin for the treatment of peptic ulcer; and NATRINIL, a cation exchange resin for the control of edema. Trained representatives will be in attendance to discuss our resin preparations and other specialties: ACTH, Ammivin, AVC Improved, Benat, DTP Vaccine, Natolone, as well as any of National's vast array of pharmaceutical and biological products.

THE NESTLE COMPANY, Inc. **Renaissance—74**
Colorado Springs, Colorado

You are cordially invited to visit the Nestle Booth No. 74 for information on Arobon, a new clinically tested, proven product, prepared from specially processed Carob flour and designed for the treatment of non-specific diarrhea. Literature and information on Nestle's Milk products will be available.

THE NETTLESHIP COMPANY **Renaissance—85**
Los Angeles

Specialists in the field of malpractice insurance since 1924 and administrators of the official programs of eight professional Associations, this organization will have representatives present qualified to discuss with the doctor patient relationship problems.

Specimen Patient Consent and Authority Forms will be "free for the asking," as well as other valuable Claims Prevention material.

Information as to Accident and Sickness Insurance for the doctor on the extraordinarily favorable basis made possible by Society Group Policies will also be available.

Over 9,000 physicians and surgeons and 300 hospitals are insured by this firm specializing in doctors' insurance problems.

Room and Booth No.

ORTHO PHARMACEUTICAL CORPORATION
Raritan, New Jersey **Ballroom—42**

ORTHO cordially invites you to visit their exhibit at Booth No. 42. The exhibit will include the ORTHO line of obstetrical and gynecological pharmaceuticals.

Featured will be the well-known ORTHO preparations for conception control. Representatives will be on hand to greet you and discuss any of the ORTHO products with you.

PACIFIC COAST MEDICAL BUREAU, Agency
San Francisco **Ballroom—57**

The Pacific Coast Medical Bureau of San Francisco will have representatives in Booth No. 57. This Bureau, now in its eighth year in California, has contacts throughout the State. Prompt and confidential services to doctors seeking new associations or locations or to Clinics or Groups needing additional personnel. Files available on general practitioners and Diplomates of all Specialty Boards. Drop by Booth No. 57 and chat with Maria Gizzi, Director.

PARKE, DAVIS & CO. **Ballroom—40**
Detroit, Michigan

Medical Service Members of the Parke, Davis & Company Staff will be in daily attendance at our commercial exhibit for consultation and discussion of the various products listed in our Pharmaceutic, Antibiotic, and Biologic Catalog. Important Specialties, such as Chloromycetin, Penicillin S-R, Benadryl, Vitamins, Oxycel, Thrombin Topical, Hypnotics, and others will be featured. You are most cordially invited to visit our exhibit with the assurance that your personal interest will indeed be very much appreciated.

PELTON & CRANE COMPANY **Ballroom—67**
Detroit, Michigan

Pelton and Crane will exhibit in Booth No. 67 their latest sterilizers and autoclaves, featuring their new F. L. No. 2 Speed Autoclave. Competent representatives will gladly assist you in selecting the proper equipment for your office or hospital.

PET MILK COMPANY **Ballroom Foyer—7, 8**
San Francisco

Pet Milk Company presents a miniature model of an evaporated milk plant. This exhibit offers an opportunity to obtain information about the production of Pet Milk, and the time-saving Pet Milk services available to doctors. Miniature Pet Milk cans given to persons who visit the Pet Milk booth.

CHARLES PFIZER & COMPANY, Inc.
Brooklyn, New York **Ballroom—34**

Terramycin, newest of the broad spectrum antibiotics forms a dramatic central feature of the display of Charles Pfizer & Co., Inc., Brooklyn, New York. The newest dosage forms of Terramycin are exhibited and indications for use are described.

PHILIP MORRIS & CO., Ltd., Inc. **Ballroom—44**
New York, New York

Philip Morris and Company will show the results of research on irritant effects of cigarette smoke. These results show conclusively that Philip Morris are less irritating than other cigarettes. An interesting demonstration will be made on smokers at the exhibit which will show the difference in cigarettes.

Room and Booth No.

PICKER X-RAY **Ballroom—36**
Los Angeles

Picker X-Ray of Los Angeles and Sicular X-Ray of San Francisco will feature new and interesting x-ray accessories. Radiographic pictures taken with the new technics will also be shown.

RIKER LABORATORIES, Inc. **Renaissance—82**
Los Angeles

Riker Laboratories will feature Veriloid Intravenous Solution, which makes available to the physician, for the first time, a means of reducing the arterial tension to any desired level by the intravenous route. Regardless of the severity or cause of the hypertension, Veriloid Intravenous can, within a matter of minutes, reduce the pressure to normal or near-normal limits, and so maintain it for hours or days. Veriloid (a chemically and biologically standardized alkaloidal extract from Veratrum viride) is also available in tablet form, for oral administration, as supplementary and follow-up therapy to Veriloid Intravenous Solution.

RITTER COMPANY, Inc. **Galeria Room—107**
Rochester, New York

You are cordially invited to stop by and see the new line of Ritter Treatment and Examination Tables. A representative will be on hand to assist you in present problems.

A. H. ROBINS COMPANY, Inc.
Richmond, Virginia **Ballroom Foyer—11**

The A. H. Robins Company exhibit is featuring PHENAPHEN and PHENAPHEN with CODEINE, "the complete analgesics"; and ENTOZYME, the "tablet-within-a-tablet" for comprehensive digestive therapy. Robins Medical Service Representatives welcome the privilege of discussing with physicians attending the Assembly these and other products in the company's line of prescription specialties.

SANBORN COMPANY **Renaissance—62**
Cambridge, Massachusetts

Visitors at the Sanborn Company Booth, No. 62, will have the opportunity for acquaintance with the "Viso family" of direct-writing recorders for diagnosis, teaching, and research; the famous Viso-Cardiette, leader among direct-writing electrocardiographs; the Viso Recorder, for single channel recording without electrocardiography; and the Twin and Poly-Visos, for two and four channel recording of a wide variety of biophysical phenomena.

Also on display will be such useful supplementary instruments as the Sanborn Electromanometer and Ballistocardiograph; and attachments for registration of heart sounds (for timing), pulse waves, and pneumograms.

For the clinician interested in metabolism testing, the display will also feature the Sanborn Metabulator, with its revolutionary "all enclosed" design and "table-top" operation.

SANDOZ PHARMACEUTICALS
San Francisco **Renaissance—78**

This display will feature Cafergot for the oral treatment of migraine and other types of headache; DHE-45 (Dihydroergotamine) for the parenteral treatment of migraine; Mesantoin and Hydantal for the treatment of epilepsy; Methergine, an oxytocic; several cardiac glycosides including Cedilanid, Digilanid and Strophosid; and Hydergine (CCK-179) for essential hypertension and peripheral vascular disease.

Room and Booth No.

W. B. SAUNDERS COMPANY **Ballroom—59**
Philadelphia, Pennsylvania

We invite all doctors attending the meeting of the California Medical Association to visit our exhibit where we will display a complete line of our books including Hyman's *Integrated Practice of Medicine*, Hyman's *Progress Volume*, Conn's *1952 Current Therapy*, *Surgical Practice of the Lahey Clinic*, Cecil's *Specialties in General Practice*, Meschan's *Atlas of Normal Radiographic Anatomy*, *American Illustrated Medical Dictionary*, Salter's *Textbook of Pharmacology*, Bland's *Clinical Uses of Fluids and Electrolytes*, Howorth's *Textbook of Orthopedics*, American College of Surgeons' *Surgical Forum*, Campbell's *Clinical Pediatric Urology*, Braasch and Emmett's *Clinical Urography*, and many other new books and new editions.

R. L. SCHERER COMPANY **Ballroom Foyer—27**
Los Angeles

We will exhibit an x-ray unit, surgical instruments, diagnostic instruments, and other items to interest the profession. We will also have on display the FCC approved Diathermy. You are cordially invited to visit our booth.

SCHERING CORPORATION **Ballroom—30**
Bloomfield, New Jersey

Members of the California Medical Association and their guests are cordially invited to visit the Schering exhibit where new therapeutic developments will be featured. Schering representatives will be present to discuss with you these products as well as other products of our manufacture.

G. D. SEARLE & CO. **Renaissance—77**
Chicago, Illinois

You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle Products of Research.

Featured will be Banthine, the true anticholinergic drug for the treatment of peptic ulcers; Dramamine, for the prevention and active treatment of motion sickness; and Alidase, Searle brand of hyaluronidase which permits subcutaneous feedings at intravenous speed.

Other time-proven products of Searle research on which information may be obtained are Searle Aminophyllin in all dosage forms, Metamucil, Ketochol, Floraquin, Kiophyllin, Diodoquin, Pavatrine, and Pavatrine with Phenobarbital.

SHARP & DOHME **Ballroom Foyer—23**
Philadelphia, Pennsylvania

Research data relative to the potentiating effect of the antibiotics, bacitracin and tyrothricin, are featured in the Sharp & Dohme booth. The synergistic effect of penicillin in conjunction with the sulfonamides and clinical data on the use of vitamin B_{12} are also of major interest. Our representatives will welcome your visit.

SMITH-DORSEY **Ballroom—25**
Lincoln, Nebraska

Smith-Dorsey is featuring: Doraxamin, an improved treatment for peptic ulcer; Dorsaphyllin, a buffered aminophylline possessing better gastric tolerance; Pasara (Para-Aminosalicylate Sodium), an adjunct therapy in tuberculosis; H. P. S. Sixty, a well tolerated protein supplement; and many Council Accepted injectables.

You are cordially invited to make the Smith-Dorsey booth your headquarters.

Room and Booth No.

SMITH, KLINE & FRENCH LABORATORIES
Philadelphia, Pennsylvania **Ballroom—31**

'Pen-Eff'—a *new form* of oral penicillin. 'Pen-Eff' is an *effervescent* penicillin tablet containing 250,000 units of crystalline potassium penicillin G. The tablet is dissolved in water and taken orally as a sparkling, pleasant-tasting liquid. 'Pen-Eff' contains 300% more buffering alkali than any other penicillin tablet, and it is equally effective on a fasting or non-fasting stomach. 'Pen-Eff' is effective with only 3 doses daily.

E. R. SQUIBB & SONS **Ballroom Foyer—22**
New York, New York

E. R. Squibb & Sons look forward to seeing you at the California Medical Association meeting.

In support of the active scientific program planned for you, the Squibb representative will present information on related products. Service leaflets will be available to you to take or to be sent to your home upon request.

Please visit the Squibb booth.

J. W. STACEY, Inc. **Ballroom Foyer—13**
San Francisco

Stacey's, established over a quarter of a century ago by members of the medical profession, provides the doctor in the West with an efficient source for all medical books of all publishers. At Booth No. 13 you will find displayed the latest books on medicine, surgery and the specialties. You are cordially invited to browse at your leisure.

STAYNER CORPORATION **Ballroom Foyer—9**
Berkeley

Stayner cordially invites you to visit our booth where we will exhibit VIT-A-STAY, the latest development in Vitamin A therapy which affords better absorption, freedom from regurgitation and sensitivity. VIT-A-STAY tablets contain no oil of any kind to emulsify. We will also feature Stayner Placebo Capsules for barbiturate withdrawal therapy and demonstrate our fast-acting, water-soluble D.A.S. tablets for control of obesity. We will be happy to discuss any of the other 120 products of our manufacture or to merely have you use our booth as your headquarters.

THE STUART COMPANY **Ballroom Foyer—6**
Pasadena

The Stuart Company will feature several of its nutritional specialties with special emphasis on three new items which have just been introduced.

TRAVENOL LABORATORIES, Inc.
Morton Grove, Illinois **Ballroom—28**

The new drug, Pyromen® is a sterile, nonprotein, nonanaphylactogenic bacterial component in a colloidal dispersion for intravenous or intradermal use. Pyromen produces a generalized stimulation of the reticulo-endothelial system and increased adrenocortical activity. Pyromen is a successful new drug which has proved its usefulness in the treatment of allergies and dermatoses.

UNITED LABORATORIES **Renaissance—65**
Pasadena

Clinical and basic laboratory research are the cornerstones of United Laboratories' Specialty products. Collaboration with investigators of medical institutions for the past three years has helped develop the clinical usage of ACTH. ACTROPE, United's highly purified Corticotropin (ACTH), will be featured.

Also displayed will be LIPO-B. Investigations of lipotropic and oxytropic combination therapy in the treatment of atherosclerosis show promise. LIPO-B is indicated in the treatment of fatty infiltration of the liver, a common factor in generalized malnutrition, alcoholism and diabetes mellitus.

Bru-Col, combining mixed oxidized bile acids for stimulative therapy in the bile complex, will also be featured.

U. S. VITAMIN CORPORATION **Ballroom—39**
New York, New York

See the "oil-in-water" demonstration of liposoluble vitamins A and D made completely water soluble . . . a vitamin technical achievement originated and developed by the U. S. Vitamin Corporation Research laboratories.

Three pharmaceutical firsts . . . Vi-Syneral Vitamin Drops—multivitamins in drops solution; Vi-Syneral Injectable—multivitamin parenteral solution and now Vi-Aqua Therapeutic—aqueous multivitamins in capsules . . . for more rapid absorption, greater therapeutic activity, shorter treatment time.

We cordially invite you to our booth for detailed literature and professional samples.

THE UPJOHN COMPANY **Galeria Room—111**
Kalamazoo, Michigan

It is the sincere desire of The Upjohn Company to make some definite contribution to the success of the 1952 meeting. Stop by at Booth No. 111 to relax and discuss topics of mutual interest.

VAISEY-BRISTOL SHOE CO., Inc.
Rochester, New York **Galeria Room—100**

Representatives will explain the diagnostic value of Jumping Jack shoes and the criteria for determining whether the early walking child is strengthening his foot by proper foot function or is possibly damaging it by walking poorly.

Jumping Jack shoes are not "corrective" shoes but representatives are equipped to discuss therapeutic wedging which may be installed in the shoes by prescription.

Of especial interest is the Sincock system of determining the precise amount of correction needed to rectify a faulty gait. Many doctors have lauded Dr. Sincock's empirical method as "genius."

VARICK PHARMACAL CO., Inc.
New York, New York **Renaissance—80**

Varick Pharmacal Co., Inc.—E. Fougera & Co., Inc., cordially invite physicians to discuss with professional representatives new preparations of importance to their everyday practice. Descriptive literature and samples of all products will be available.

WALKER LABORATORIES, Inc.
Mount Vernon, New York **Renaissance—79**

PRECALCIN, the complete prenatal product supplying all essential vitamins and minerals, will be exhibited. PRECALCIN is unique in that the capsules contain a dry powder fill with no fish liver oils, thereby providing excellent tolerance and patient appeal. Other outstanding preparations will also be featured and our representatives present will be glad to discuss all aspects of current therapy in their particular fields.

WALTERS SURGICAL COMPANY
Los Angeles **Renaissance—68**

We will display H. G. Fischer X-ray equipment and short-wave diathermies and the latest developments in medical equipment.

Room and Booth No.

WESTERN SURGICAL SUPPLY COMPANY
Los Angeles **Renaissance—50**

All types of Surgical and Medical supplies, including surgical instruments; Hamilton furniture; sterilizers; autoclaves, enamel ware and stainless steel ware; physiotherapy equipment; laboratory supplies and equipment, and electrical equipment will be shown at our booth.

WESTINGHOUSE ELECTRIC CORPORATION
Los Angeles **Galeria Room—102**

We will be showing the Westex, a versatile new x-ray table suitable for private practice and hospital use. We will also show other x-ray accessories. You are cordially invited to stop by and discuss your x-ray problems with our representatives.

WESTWOOD PHARMACEUTICALS
Buffalo, New York **Ballroom—41**

Westwood will display its vaginal anti-infective Westhiazole Vaginal and Gentia-Jel in the new improved plastic single-dose disposable applicators which greatly simplify the administration of intravaginal jelly. The use of gentian violet in the treatment of monilial vaginitis has been made possible in the office and in the home with these plastic disposable applicators. The ease and convenience in the use of these applicators will be demonstrated at the Westwood booth.

Westwood also features its new, greatly improved Lowila Cake. It's smooth, slippery, gives oceans of suds and compares with soap in stability. We will give physicians a cake for personal use at the hotel, to prove that it gives the use-satisfaction of soap but is kind to sensitive skin.

WHITE LABORATORIES, Inc.
Kenilworth, New Jersey **Ballroom Foyer—20**

Dienestrol, the potent, orally effective synthetic estrogen, will be on display. Dienestrol differs chemically from stilbestrol and other synthetic estrogens. It is unique in its action and is one of the best tolerated of all orally effective synthetic estrogens.

WINTHROP-STEARNS, Inc. **Ballroom—47**
New York, New York

Winthrop-Stearns, Inc., New York, invite you to visit Booth No. 47, where the following products will be featured—Mucilose Compound Tablets, the new physiologic bulk laxative; Mytolon, new synthetic skeletal muscle relaxant for use as adjunct to surgical anesthesia; Milibis, new, virtually non-toxic amebacide; Aralen, effective antimalarial, also specific for extra-intestinal (hepatic) amebiasis; Fergon Plus, a combination of the important anti-anemia factors, Vitamin B_{12}, Folic Acid, ferrous gluconate and ascorbic acid. It is designed specifically for the prophylaxis and therapy, iron deficiency and macrocytic anemias; Levophed, the true vasoconstrictor hormone of the adrenal medulla, for the maintenance of blood pressure in shock and other acute hypotensive states.

WYETH INCORPORATED **Ballroom—45**
Philadelphia, Pennsylvania

Wyeth Incorporated extends to you a cordial invitation to visit the Wyeth booth at the April meeting of the California Medical Association, where trained representatives will be pleased to discuss and supply literature concerning many outstanding therapeutic agents. Featured in this exhibit will be Thiomerin, a recently developed safe mercurial diuretic, and Adjudets, Wyeth's pleasant-to-take troche form of dextro-amphetamine phosphate and essential vitamins which curb the appetite and maintain good health in the obese patient. Other widely prescribed ethical specialties which may be of interest to you, such as Ironate, Sevetol, Sebella, Beplete with Belladonna, Phenergan, Sulfose, Amphojel, Pondets and Tubex will be displayed.

PRE-CONVENTION REPORTS

Officers - Councilors - Committees - County Societies

REPORTS OF GENERAL OFFICERS

REPORT OF THE PRESIDENT

To the Members of the California Medical Association and the House of Delegates:

During the past several years the C.M.A. has been carrying on and developing a public relations program. During the early stages the work was of necessity of the general educational campaign type. This has been so effective that in the past two years most of our efforts have been directed toward the development of down-to-earth grass roots public relations, right at the level of the doctor and patient.

The psychological study of the individual doctor-patient relationship by Dr. Ernest Dichter has been finished and is available in printed form. A practical digest of the Dichter report, "Doctor and Patient," has been excellently prepared by Mr. Rollen Waterson and Mr. William Tobitt, Executive Secretaries of Alameda-Contra Costa and Orange County Medical Associations, respectively. Great credit is due these men for their most able efforts.

A department of public relations of the C.M.A. has been set up during the past year and is under the direction of Mr. Ed Clancy. He is assisted by Mr. Glenn Gillette in the North and by Mr. Jerry Pettis in the South. This department will assist all county medical associations desiring aid in developing a public relations program. It should also be most helpful in carrying on a closer liaison with the Woman's Auxiliary.

Your President, ably assisted by the President-elect, has visited the county medical associations of the state. I have endeavored to discuss the importance of the doctor-patient relationship, and stimulate a deep interest in further work along these lines. Mr. John Hunton, Mr. Ben Read, and Mr. Ed Clancy have aided greatly in helping to present a well rounded program of public relations and legislation. Their efforts are gratefully acknowledged.

The Woman's Auxiliary to the C.M.A. has been most impressive. It is truly doing a great work along many lines. Their joint meetings with the leaders of other woman's groups, at which medical problems and progress are discussed by capable speakers, are outstanding examples of fine public relations. Under the tireless, enthusiastic leadership of their President, Mrs. Stanley Truman, the Auxiliary has advanced greatly in the past year. I am sure all the members of the C.M.A. join with me in thanking the Woman's Auxiliary for their great work.

The C.M.A. is fortunate in having a progressive, intelligent, hard-working and faithful Council. This group of men, through its officers and committees, quietly carry on the affairs of the C.M.A., most capably and often with very little credit. Theirs is a true love of their profession.

Our legislative and legal affairs, under the guidance of Dr. Dwight Murray, Mr. Ben Read, and Mr. Howard Hassard, have as usual been most capably handled. CALIFORNIA MEDICINE is considered one of the best medical journals in the country. The Editor, Dr. Dwight Wilbur, and his staff are to be complimented.

The business affairs of the C.M.A. are in good condition, and we are indeed fortunate to have such a well-run office, under the direction of Mr. John Hunton.

It has been a great honor and a privilege to be your President, and I wish to thank all members of the C.M.A. and all county medical associations for their graciousness shown me during the past year.

Sincerely,

H. GORDON MACLEAN, *President*

REPORT OF THE PRESIDENT-ELECT

To the President and the House of Delegates:

In performing his assigned duties in the visitation program covering the northern component county associations, your President-elect has been more than ever impressed with the vast geographic expanses and the productive resources of the state of California. The county societies are well organized and eagerly interested in furthering the aims and ideals of the profession. Attendance upon these meetings was for the most part excellent, and this was all the more noteworthy because in some of the more sparsely settled areas such attendance required travel in some instance of a hundred miles or more. On several occasions, the Woman's Auxiliaries met with us, adding not only charm and hospitality, but indicating a commendable awareness of medicine's problems and an ardent desire to aid in their solution.

The California Medical Association is indeed to be congratulated upon the high caliber of those in its employ. Mr. John Hunton, Executive Secretary, Mr. Ben Read, Executive Secretary of the Public Health League, and Mr. Ed Clancy, Director of Public Relations, were warmly welcomed wherever they went. Mr. Clancy's new associates, Mr. Glenn W. Gillette for the North, and Mr. Jerry L. Pettis for the South, demonstrated an ability to discuss the Association's activities in a manner that augurs well for the future.

The Association's new grass-roots public relations program was explained and received hearty endorsement. "A Biologic Interpretation of Economics" was presented in which stress was placed upon fundamental natural law as the only dependable basis for a productive and expanding economic system. The incurable fallacies of collectivism and their historic failures were summarized, and the appropriate functions of government from a biologic viewpoint defined.

Respectfully submitted,

L. A. ALESEN, *President-elect*

REPORT OF THE SPEAKER OF THE HOUSE OF DELEGATES

To the President and the House of Delegates:

The adoption of the new Constitution and By-Laws at the last Annual Session has made some changes in the operation of the House of Delegates.

1. At the present time it is mandatory that the House of Delegates meets twice a year, the Annual Session to be held in the spring and the Interim Session to be held in the fall. Chapt. V, Sect. 1(a) (By-Laws).

2. Resolutions and other new business may be introduced at either regular session but shall not be acted upon until the *next* regular session. Provision is made for the introduction of emergency resolutions which may be passed at the current session provided that a two-thirds affirmative vote is secured. Chapt. V, Sect. 7(c) (By-Laws).

The question immediately arises as to the mechanism for proposing an emergency resolution. It is our opinion that time will be saved if the Delegate upon proposing such a resolution shall declare it to be an emergency measure. It would then be received and processed by the appropriate reference committee. This resolution, upon being brought before the House for action, would require a two-thirds vote for adoption.

The usual resolutions and other new business, not designated as emergency, must be held for action until the next regular session. Section 9 of the By-Laws provides that Reference Committees shall make their report and that these shall be mailed to each delegate at least 30 days prior to the meeting of the House of Delegates. This new procedure will give each delegate an ample opportunity to study the proposed legislation.

With this new machinery in action there will need to be some continuity within the Reference Committees from session to session. At least one member should be held over in order to present the material from the last session.

The first Interim Session proved of great value, not alone for the volume of business that was transacted but in providing a trial run of our new By-Laws. Each delegate that participated has earned the thanks of the Association.

Respectfully submitted,

Donald L. Charnock, *Speaker*

REPORT OF THE VICE-SPEAKER

To the President and the House of Delegates:

The Vice-Speaker has attended all meetings of the Council during the year and assisted the Speaker in the conduct of the interim meeting of the House of Delegates at Los Angeles in December. He has attended numerous meetings of special committees to which he has been appointed by the President and the Council.

Respectfully submitted,

H. A. Randel, *Vice-Speaker*

REPORT OF THE CHAIRMAN OF THE COUNCIL

To the President and the House of Delegates:

The Council procedure during the current year has followed closely that adopted for the last two years and as has been reported to you has consisted in the usual periodic Council meetings during which the mornings have been devoted to committee reports and business of a routine nature, the lunch period to hearing business representatives and other groups who wished to appear before the Council and the afternoons to the consideration of new problems.

If, at times, members have been inconvenienced by being requested to appear during certain hours, it was due to the attempt to follow this schedule as closely as possible.

The individual items of business have appeared in the Council minutes so that every member has had the opportunity to follow the deliberations of the Council if he wished.

As during all prior years, the presence and assistance of Dr. Murray, Mr. Hassard, Ben Read, Ed Clancy and John Hunton have been invaluable to the Council.

Respectfully submitted,

Sidney J. Shipman, *Chairman of the Council*

REPORT OF THE VICE-CHAIRMAN OF THE COUNCIL

To the President and the House of Delegates:

As Vice-Chairman of the Council I have attended all the meetings of the Council, and have aided the Chairman whenever any assistance was requested.

Respectfully submitted,

Donald D. Lum, *Vice-Chairman of the Council*

Report of the Council

To the President and the House of Delegates:

The Council rendered a report to the Interim Session of the House of Delegates, held on December 1-2, 1951. This report has been printed in the Journal and reference is hereby made to it as a progress report covering the activities of the Council for the Association year from May to December 1951.

Only principal action taken by the Council since the date of the earlier report was the appropriation of $40,000 to the C.P.S. Study Committee, as authorized by the House of Delegates.

At this writing the Council is scheduled to hold another meeting on February 10, 1952, and, in accordance with usual custom, the Council will plan to meet the day before the start of the 1952 Annual Session.

It is with sorrow that the Council calls attention to the death on December 20, 1951, of Dr. John Ball, Councilor from the Second Councilor District. Dr. Ball had served the Council well and faithfully and had at all times represented his constituents in a most able manner. His passing leaves a gap in the Council, to be filled by action of the House of Delegates for the term expiring with the Annual Session of 1953.

If any consequential actions are taken at the February 10 or April 26 meetings of the Council, an additional report will be made to the House of Delegates.

Respectfully submitted,

Sidney J. Shipman, *Chairman*

REPORT OF THE CHAIRMAN OF THE EXECUTIVE COMMITTEE

To the President and the House of Delegates:

The Executive Committee has transacted business delegated to it by the Council and matters which have arisen between Council meetings and action on inter business. All such action is subject to confirmation by the Council.

I wish to thank the members of the Executive Committee for the giving of their time and wholehearted support to this work.

Respectfully submitted,

Donald D. Lum, *Chairman*

REPORT OF THE PRESIDENT OF THE TRUSTEES OF THE C.M.A.

To the President and the House of Delegates:

The Trustees of the C.M.A. is a non-profit holding corporation, whose members are at all times members of the Council of the C.M.A. The corporation cares for the assets of the C.M.A. It has met in accordance with its articles of incorporation and its by-laws during the past year, and its financial report is printed elsewhere in this issue under the report of the Treasurer.

Respectfully submitted,

H. Gordon MacLean, *President*

REPORT OF THE SECRETARY

To the President and the House of Delegates:

Your Secretary was reappointed by the Council at its May 16 meeting in 1951. He has attended the meetings of the Council and the Executive Committee. He has presided at meetings of the Committee on Scientific Work and at meetings of the section secretaries in arranging for the 1952 convention. This year it was also necessary to arrange for scientific speakers for the Interim Session in December 1951.

He has attended meetings of the Committee on Postgraduate Activities and other committees appointed by the House and Council.

The minutes of the Council meetings and of the Executive Committee are prepared by the Executive Secretary and are then edited by the Legal Counsel, the Secretary and the Chairman of the Council or of the Executive Committee. These minutes are then printed in CALIFORNIA MEDICINE and they contain the routine business of the Association.

It was strongly recommended that these be read in detail by all members.

Respectfully submitted,

ALBERT C. DANIELS, *Secretary*

REPORT OF THE EXECUTIVE SECRETARY

To the President and the House of Delegates:

Your executive secretary submits his report for the past year, arranged into the divisions of authority conferred upon him by action of the Council.

1. *Administrative:* The Association's office has undergone some physical changes in the past year. Some additional space was secured and some reconstruction done in the layout of the office, toward the goal of more efficient operations. At present all operations of the official journal are concentrated in one office area and all general, administrative and public relations activities in another. The two are connected by intercommunicating telephones.

The Association has taken on one more office assistant, a secretary who divides her time between public relations and membership activities. As the membership continues to grow, however, it is apparent that a full-time assistant will soon be needed to handle this important phase of the Association's work. It is worthy of note that the membership of the C.M.A. has more than doubled in the past 11 years; at the same time, the imposition of annual dues by the American Medical Association has created many new problems of handling membership items. California has been fortunate to date in collecting such a high percentage of A.M.A. dues that the state has not lost any representation in the A.M.A. House of Delegates. Several other large state associations have not fared so well and are now being forced to decrease their A.M.A. representation.

The office staff, in San Francisco, now consists of the executive secretary, his assistant, an assistant to the editor, an advertising manager, an associate director of public relations and six secretaries whose combined work covers all Association activities. In the Southern California office, in Los Angeles, are located the director and an associate director of public relations. They do not have any full-time assistants but have secretarial service readily available to meet their requirements.

Other C.M.A. employees, on a part-time appointment basis, are your editor, director of postgraduate activities and his part-time secretary, and a medical director of the Cancer Commission.

The headquarters office is in very good physical condition. All equipment is modern and adequate for the work to be done. The office arrangement, while not ideal, is efficient and a workmanlike job is being produced by all concerned.

2. *Membership:* In accordance with the requirements of the By-Laws, the following account of active membership in the component societies, as of November 1, 1951, is given:

MEMBERSHIP—November 1, 1951

Alameda-Contra Costa	988
Butte-Glenn	55
Fresno	229
Humboldt	57
Imperial	37
Inyo-Mono	10
Kern	123
Kings	23
Lassen-Plumas-Modoc	19
Los Angeles	4,585
Marin	80
Mendocino-Lake	27
Merced	39
Monterey	115
Napa	51
Orange	200
Placer-Nevada-Sierra	56
Riverside	112
Sacramento	257
San Benito	9
San Bernardino	235
San Diego	506
San Francisco	1,432
San Joaquin	152
San Luis Obispo	47
San Mateo	239
Santa Barbara	150
Santa Clara	346
Santa Cruz	72
Shasta	24
Siskiyou	16
Solano	60
Sonoma	100
Stanislaus	94
Tehama	10
Tulare	78
Ventura	67
Yolo	29
Yuba-Sutter-Colusa	39
Total	10,768

It is upon this count of membership that the county societies are entitled to their representation in the House of Delegates, on the basis of one Delegate for each fifty active members or major fraction thereof, with a minimum of two Delegates for each society.

The secretaries of the component societies have been most cooperative in maintaining good membership records. It is inevitable in a large membership that some errors occur, such as changes of address not keeping up with the moving members, but it is believed that a very high degree of efficiency is being maintained in such matters.

3. *Meetings:* The executive secretary has attended all meetings of the Council and of the Executive Committee. He has also attended the two meetings of the American Medical Association, serving as secretary to the California delegation. In company with either the president or president-elect of the Association, he has attended meetings of 26 county societies, together with correlated meetings of the Woman's Auxiliary and other organizations.

4. *Financial:* The Association's 1950-1951 fiscal year ended with an excess of $34,279 of expenditures over revenues, after giving effect to the $100,000 contributed to the American Medical Education Foundation. General income was about $37,000 below that of the preceding year, this drop resulting from decreased annual dues. Revenues of the official journal were up almost $26,000, the increase coming almost entirely from higher advertising revenues.

Administrative expenses of just under $148,000 were some $19,000 higher than in the previous fiscal year, while

expenditures for scientific, educational and public relations purposes were almost $75,000 higher, including the $100,000 educational contribution. Expenses of the journal were up $21,000, the bulk of this increase coming from higher printing costs for a bigger journal for more members. Further comment will be made on journal finances under a separate section of this report.

It should be borne in mind that the C.M.A. today is a much larger business operation than in former years. In the fiscal year ended June 30, 1951, the Association took in $569,334 and expended $603,613. It published a journal at a total cost of more than $10,000 monthly, it made loans totaling $70,000 to blood banks and it was able, out of current funds, to make the educational grant to the A.M.A. without disturbing the accumulated surplus funds held by the corporation, Trustees of the C.M.A.

The corporation showed a net profit of $24,749 in the past fiscal year, this resulting from $25,695 interest income from U. S. Government securities held, less operating expenses of $946. At the close of the fiscal period the corporation showed total assets of $1,087,400, consisting entirely of cash or securities. Surplus was $1,050,547 and trust accounts totaled $36,853, these including the Physicians' Benevolence Fund and the Herzstein Bequest Fund.

5. *California Medicine:* As noted above, the official journal was increased in size, circulation, revenue and expenditures last year. Circulation has now increased to the point where new and higher advertising rates have been put into effect. Production costs have mounted along with increased size and numbers, as have advertising revenues. Percentagewise, advertising sales were up 28.2 per cent for the year, from $87,130 to $111,673. Other revenues were 3.2 per cent higher, at $35,805 compared with $34,683, and expenses were 20.8 per cent higher, at $122,493 compared with $101,402. Net profit for the 1951 fiscal year was $24,984, or 22.8 per cent higher than the $20,411 net of the preceding year.

In addition, California Medicine continued to hold its eminent position among medical publications. It continued to be widely quoted nationally and some of its editorial features have been emulated by other journals. Its advertising pages are constantly screened by a committee of members who operate under a stringent set of regulations devised to keep the advertising pages clean in all respects. This committee, now under the chairmanship of Dr. Matthew N. Hosmer of San Francisco, is one of the hardest-working committees in the Association and is deserving of much praise for its effective and devoted duty.

6. *Public Policy and Legislation:* The executive secretary has continued to work with the Committee on Public Policy and Legislation, supplementing the activities of those who devote their entire time to this field. The 1951 legislative session was the longest on record and produced the highest number of proposed legislative acts in the history of California. The Association was able to secure enactment of some legislation of great importance and to oppose successfully the passage of proposals deemed inimical to the best interests of the profession.

7. *Public Relations:* The executive secretary serves as chairman of the Advisory Planning Committee, into whose hands the Council has entrusted the formation and activation of a public relations program for the Association. This program has been developed, approved in principle by the Council and turned over to the committee for inauguration, under the direct supervision of the Executive Committee.

Under the present program Mr. Ed Clancy, formerly field secretary, has been named director of public relations, and Messrs. J. L. Pettis and Glenn W. Gillette named as his associates. Mr. Pettis was formerly assistant to the president of a large airlines company and Mr. Gillette served for three years as executive secretary of the Fresno County Medical Society. Under the leadership of this team, several progressive programs for county medical societies have been developed and placed in operation in various county medical societies. The public relations staff maintains constant contact with the county societies and works with them in a cooperative, not a dictatorial, fashion. It is believed that the programs now under way, including establishment of telephone answering services, advertising to publicize such services and to delineate the position of a Doctor of Medicine, and radio programs developed as a public service, will do much to improve the general feeling of the public toward the profession.

These programs have been discussed at county medical society meetings attended by a public relations staff member, the executive secretary and one of the officers of the Association.

8. *Annual Session:* The 1952 Annual Session is now well into the planning stage and it is believed that a most successful meeting will result. Technical and scientific exhibitors have shown a strong interest in the session and the scientific program is most complete. A mention should be called to the fact that the Association is again about to outgrow the meeting facilities available in California. It is becoming increasingly difficult to secure the space needed for scientific and business meetings and technical and scientific exhibits in the hotels and other buildings in the state. Because of crowded convention schedules, many of the larger hotels cannot accommodate meetings on less than two years' notice. Since the Council is authorized to select the meeting place, this matter will be taken up with that body.

9. *Conclusion:* The executive secretary wishes to express heartfelt thanks to the officers and Councilors and to the numerous committee chairmen and members with whom he has been privileged to work. All these have been extremely cooperative and helpful and a debt of gratitude is due them. Likewise, the public relations staff, the legal counsel and the executive secretary of the Public Health League of California have been constantly cooperative in working for the good of the Association in the strictest teamwork. The office staff must again be thanked deeply for its continued help in all matters and its willing attitude in taking on whatever job is presented. Without such cooperation from all sides the work of the Association would be seriously impeded.

Respectfully submitted,

John Hunton, *Executive Secretary*

REPORT OF THE EDITOR

To the President and the House of Delegates:

Sharing to some extent in what appears to be a general trend, California Medicine last year received fewer unsolicited manuscripts for consideration than it did in the previous year. Editors of other state journals who attended the State Medical Journal Conference held last November in Chicago noted a dwindling supply of manuscripts from sources other than meetings of medical organizations. Those who spoke on the subject indicated a drought for their publications somewhat more severe than that which the journal of the California Medical Association has experienced. The editor of one regional journal said that in the preceding year only about one-tenth of the scientific articles printed by the publication he edits were reports that had not previously been delivered at formal medical meetings.

California Medicine's experience in this regard is indicated in the following tabulation of the numbers of manuscripts received from the Annual Session and from other sources in the last three years:

	Annual Session		Other		Totals	
	Rec'd	Accepted	Rec'd	Accepted	Rec'd	Accepted
1949	176	87	131	73	307	160
1950	179	82	114	66	293	148
1951	138	89	79	42	217	131

To budding authors, and to mature ones too, the implication is plain: There is space waiting for good, well-written timely articles on subjects of medical interest. As one of the functions of California Medicine is to reflect the practice of medicine in the state as a whole, special consideration is given to articles submitted from sources outside the metropolitan and teaching centers. The "market" for reports of difficult or unusual cases is particularly good.

Although it is anticipated that the inventory of articles for publication soon will be seasonally increased by the acceptance of some of the papers presented at the forthcoming Annual Session, the stock on hand has been reduced during the past year in order to shorten to the practicable minimum the time-lag between acceptance and publication of manuscripts.

Among the entirely pleasant aspects of your editor's job is the great help given by those with whom he works. Throughout the year he feels, and herein once a year can but inadequately publicly express, his gratitude to the members of the Editorial Board, who read, criticize and winnow the manuscripts submitted. His thanks go also to many anonymous others who have helped in the production of your official journal—to those who have written material on assignment, to the reviewers of books, and to those who have given their time to special reviews of manuscripts. To Robert Edwards, assistant to the editor, and Mrs. Barbara Rooney of the office staff of California Medicine go special thanks for an excellent job without which the journal could not be maintained in the present state of excellence.

Respectfully submitted,

Dwight L. Wilbur, *Editor*

REPORT OF LEGAL DEPARTMENT

To the President and the House of Delegates:

The Legal Department submits the following brief summary describing the nature of its activities during the year 1951 and up to the time of the preparation of this report, January 1952:

During the past year we have attended all meetings of the House of Delegates, Council, and Executive Committee, as well as various meetings of standing committees and other agencies of the Association.

We have also prepared and submitted opinions on a wide variety of subjects, as requested by the Association or its officers or component societies, including disciplinary procedural questions, questions of interpretation of the principles of medical ethics, legal problems connected with operation of blood banks, the relationship of corporation and other lay agencies to the practice of medicine, and a number of questions arising out of pending legislation or newly enacted laws.

In addition to our advisory services, we have also undertaken, at the instance of the Council, the following:

1. *Legislation:*

During the first six months of 1951 the Legislature was in regular session and during such time we assisted the Committee on Public Policy and Legislation in the presentation of bills to legislative committees, opposition of bills inimical to the public health, and aided the committee in the interpretation and analysis of the several hundred bills affecting the practice of medicine.

One bill that was sponsored jointly by the California Medical Association and the State Board of Medical Examiners, and which successfully passed the Legislature and was signed by the Governor, merits special comment. It was Assembly Bill 2672 authored by Mr. Arthur H. Connolly, Jr., of San Francisco, and it added Section 2013 to the medical practice act chapter of the Business and Professions code. It became law on 22 September 1951. It provides a definition of the words "diagnose" and "diagnosis," including specifically the use of mechanical devices or machines for the purpose of representing to any person any conclusion with respect to such person's physical, mental or nervous condition. It is sufficiently broad to include all diagnostic procedures in the fields of radiology and pathology, and we believe puts at rest the contention that has been advanced from time to time that the taking of an x-ray film is a "business function" separable from the "professional function" of interpreting the film.

In addition, the new Section 2013 indirectly incorporates psychological services into the definition of the practice of medicine by exempting from the term "diagnosis" the performance of psychological services on referral from a licensed physician and surgeon. Under general rules of statutory construction, a specific exemption necessarily implies that the general provisions would have covered the subject except for the specific exemption. Applying this principle to Section 2013, the performance of psychological services by one who is not a licensed physician and surgeon and who is not acting on referral from a licensed physician and surgeon, constitutes the unlawful practice of medicine.

Section 2013 also specifically exempts testing and guidance programs in schools and private industry.

2. *Malpractice cases:*

As amici curiae we have appeared in the case of *Pearce vs. Linde et al*, now pending before the District Court of Appeal, First Appellate District, Division Two. This case involves an extremely important question of law, i.e., whether a physician practicing in another state (Nevada) is legally qualified to act as an expert witness in malpractice actions in California. It is our contention that out-of-state physicians are not sufficiently familiar with the standards of practice in California to qualify as expert witnesses in this state. At the time of preparing this report, the Court has not reached a decision.

3. *Anti-trust litigation:*

We submitted a verbal report to the House of Delegates at the interim session in December 1951, with respect to the current status of the anti-trust suits pending in the states of Washington, Oregon and Oklahoma, and in the county of San Diego. We assume it is unnecessary to repeat the report presented at that time.

Since our December report, the case of *United States vs. Oregon State Medical Society et al* has been orally argued before the United States Supreme Court. There are two basic questions involved before the Supreme Court. First, whether or not the operation of prepayment plans (other than insurance companies) involves interstate commerce, so as to be within the scope of the Sherman Act; and, second, whether or not the opposition of physicians in the state of Oregon to lay-owned "hospital associations" and their support of prepaid service plans owned and operated by medical societies, has constituted a restraint of trade. During the oral argument, all of the justices of the Supreme Court have asked frequent questions of counsel for the

Government and counsel for the Oregon State Medical Society and other defendants. The tenor of the questions indicates that the members of the court are keenly interested and intend to lay down a guide for the application of the Sherman Act to prepaid medical service plans. It must be borne in mind that the American Medical Association case arose in the District of Columbia, where the Sherman Act is applicable to all forms of trade or commerce, irrespective of the presence or absence of interstate commerce. The Oregon case is the first one to arise under that portion of the Sherman Act that is limited to restraints of trade or monopolies affecting interstate commerce.

Likewise since the December meeting, the action pending in San Diego, *Complete Service Bureau et al vs. San Diego County Medical Society et al*, has been orally argued before the Trial Court. The argument consumed three and one-half days and was completed January 31, 1952. A decision by the Trial Court may be expected within the next two months.

4. *Unlicensed prepaid medical care plans:*

For many years so-called prepaid medical and hospital plans have attempted to operate in this state without complying with the insurance laws. Their existence has been the subject of intense legislative inquiry, and from time to time remedial legislation has been proposed, but, due to conflicting points of view, such legislation has failed. Within the past year and a half the Insurance Commissioner has proceeded against the largest of these unregulated plans. He has taken action under those sections of the Insurance Code that permit the Commissioner to take control and possession as conservator or liquidator, of insurance companies that are insolvent or otherwise in violation of the insurance laws.

The Commissioner first proceeded against American Independent Medical & Health Association, whose headquarters were in San Diego, and his action in taking possession and liquidating the company was upheld by the San Diego Superior Court.

In November 1951, the present Insurance Commissioner, Mr. John R. Maloney, took possession of the business and assets of Union Mutual Medical Association and Pacific Health Service Association, both having headquarters in Los Angeles. Union Mutual Medical Association did not oppose the Commissioner's action, but Pacific Health Service Association filed an application in the Los Angeles Superior Court to recover possession of its properties from the Commissioner, on the ground that it was operating just like California Physicians' Service. In fact, Pacific Health Service Association had diligently copied the articles of incorporation and by-laws of C.P.S., as well as its contract forms, physician member certificate forms, fee schedule, and other literature. However, it had neither obtained a license from the Insurance Commissioner, nor had it complied with Section 9201 of the Corporations Code (the enabling act under which C.P.S. operates). After a hearing before Judge Nourse, of the Superior Court in Los Angeles, an opinion was rendered upholding the Insurance Commissioner and specifically finding that Pacific Health Service Association had not accomplished anything in the eyes of the law by making itself "look like" C.P.S.

The decision in the Pacific Health Service Association case will be of great importance in the future control of unlicensed prepaid medical service plans that do not comply with either the insurance laws or Section 9201 of the Corporations Code. The Insurance Commissioner's enforcement power has been firmly established, and is hound to act as a deterrent to lay promoters desiring to sell medical service contracts to the public without benefit of initial capital or any accountability for the use of funds collected.

There have been other services performed by the Legal Department which will be reported orally to the House of Delegates.

As we have concluded our report in previous years, we wish to reiterate our constant desire to serve the medical profession to the best of our ability.

Respectfully submitted,

PEART, BARATY & HASSARD,
General Counsel

REPORT OF THE TREASURER

To the President and the House of Delegates:

The Treasurer of the Association was elected by the Council on May 16, 1951. The actual duties of this office are performed by the office staff at 450 Sutter Street, San Francisco, California.

The accounts are audited by independent accounting firms. The receipts and expenditures of all funds are checked and the presence of cash, securities and other assets is certified to.

Submitted herewith is the series of accounts prepared from reports submitted by John F. Forbes & Company covering the fiscal year July 1, 1950, to June 30, 1951.

Members are urged to study these accounts for a true picture of the Association's financial position.

Respectfully submitted,

ALBERT C. DANIELS, *Treasurer*

(Balance sheets and statements of income and expenditure appear on following pages.)

CALIFORNIA MEDICAL ASSOCIATION

Balance Sheet, June 30, 1951

ASSETS

Cash		$117,395.09
Accounts Receivable		5,027.81
Loan Receivable—New Mexico Physicians' Service	$11,750.00	
Less reserve	10,750.00	
Remainder		1,000.00
Other Loans Receivable	$70,000.00	
Less reserve	70,000.00	
Remainder		.....
Investment in U. S. Treasury Bills (at cost)		199,196.00
Cash Surrender Value of Life Insurance Policies		4,844.53
Trust Fund (contra)		13,010.71
Furniture and Fixtures (at nominal value)		1.00
Deferred Charges		1,974.95
Deposits		2,261.48
Total		$344,711.57

LIABILITIES

Accounts Payable		$ 19,613.55
Accrued Expenses:		
American Medical Association—Delegates' and other expenses	$ 5,317.39	
Organization expense	2,590.63	
Committees' and sundry	4,432.66	
Pay roll taxes	336.14	
Total		12,676.82
Trust Account—Physicians' Benevolence Fund (contra)		13,010.71
Deferred Income—Prepaid Advertising		491.22
Surplus, Exhibit A		298,919.27
Total		$344,711.57

EXHIBIT A

Surplus Credits:	
Reduction in reserve for New Mexico Physicians' Service loan	$ 3,750.00
Increase in cash surrender value of life insurance policies	2,632.93
Other	49.98
Total	$ 6,432.91
Remainder	$ 27,845.95
Surplus Charges:	
Expenses applicable to a prior period	$ 862.00
To set up reserves for loans to blood banks	70,000.00
Total	$ 70,862.00
Decrease in Surplus for the Year	$ 98,707.95
Surplus, July 1, 1950	397,627.22
Surplus, June 30, 1951	$298,919.27

CALIFORNIA MEDICAL ASSOCIATION

Income and Expenditures for Fiscal Year Ended June 30, 1951

INCOME

	Fiscal Year Ended June 30 1951	1950	Increase *Decrease*
1. Membership Dues (exclusive of Journal Allocation)	$395,808.56	$438,208.68	*$ 42,400.12*
2. Annual Session	18,805.00	18,850.00	*45.00*
3. Miscellaneous Income	4,865.41	.....	4,865.41
4. Interest Income	2,377.61	1,442.71	934.90
Total Revenues	$421,856.58	$458,501.39	$ 36,644.81

EXPENDITURES

Administrative:			
5. A.M.A. Delegates' Expense	$ 20,302.26	$ 13,583.25	$ 6,719.01
6. Annual Session Expense	23,249.89	21,885.44	1,364.45
7. Employees' Annuities	3,608.52	1,529.72	2,078.80
8. Council—Executive Committee	2,367.59	2,708.15	*340.56*
9. Equipment Expense	2,014.65	1,393.40	621.25
10. Legal Department	16,268.10	9,092.28	7,175.82
11. Los Angeles Office Expense	2,109.51	2,028.42	81.09
12. Miscellaneous Expense	237.11	1,524.00	*1,286.89*
13. Office Supplies and Expense	4,598.44	4,057.30	541.14
14. Organization Expense	10,394.45	8,770.25	1,624.20
15. Rent	5,630.28	5,630.28	.....
16. Telephone and Telegraph	1,967.83	2,258.40	*290.57*
17. Payroll Tax Expense	1,519.86	1,114.71	405.15
18. Pensions	4,260.00	4,620.00	*360.00*
19. Postage	900.12	935.34	*35.22*
20. Salaries:			
(a) Administrative	30,238.62	28,725.00	1,513.62
(b) Clerical	10,133.48	9,569.68	563.80
21. Secretarial Conference	1,117.26	1,205.12	*87.86*
22. Travel Expenses:			
(a) Officers	219.10	1,385.23	*1,166.13*
(b) Council—Executive Committee	6,040.71	4,795.95	1,244.76
(c) Secretary—Executive Secretary	.....	1,189.36	*1,189.36*
23. Woman's Auxiliary	750.00	750.00	.....
Scientific, Education and Public Relations:			
24. Department of Public Relations	73,661.92	124,713.81	*51,051.89*
25. Public Policy and Legislation	67,863.31	62,289.98	5,573.33
26. Cancer Commission	11,004.07	26,329.59	*15,325.52*
27. Committees' Expense	27,842.65	19,204.94	8,637.71
28. Los Angeles Special Appropriation	24,003.56	.....	24,003.56
29. Postgraduate Committee	12,972.91	10,459.99	2,512.92
30. Contributions to Benevolence Committee	10,562.50	10,359.75	202.75
31. Donations to Medical Libraries	5,281.24	5,179.86	101.38
32. American Medical Education Foundation	100,000.00	.....	100,000.00
Total Expenses	$481,119.94	$387,289.20	$ 93,830.74
Surplus or *Loss*	*59,253.36*	71,212.19	*130,475.55*
California Medicine Surplus	24,984.50	20,410.71	4,573.79
Combined Surplus or *Loss*	*$ 34,278.86*	$ 91,622.90	*$125,091.76*

CALIFORNIA MEDICINE

Official Journal of the California Medical Association

INCOME AND EXPENDITURES FOR THE FISCAL YEAR ENDED JUNE 30, 1951

INCOME

	Fiscal Year Ended June 30 *1951*	*1950*	Increase *Decrease*
1. Advertising Sales	$111,672.70	$ 87,129.51	$ 24,543.19
2. Subscriptions (Non-Members)	2,452.89	2,064.53	388.36
3. Subscriptions Allocated from Dues	32,943.00	32,133.00	810.00
4. Reprint Sales (Net)	408.90	485.75	76.85
TOTAL REVENUES	$147,477.49	$121,812.79	$ 25,664.70

EXPENDITURES

5. Printing	$ 82,492.46	$ 66,755.37	$ 15,737.09
6. Illustrations	1,721.82	1,210.61	511.21
7. Advertising Sales Expense	10,779.73	8,889.86	1,889.87
8. Adv. Discounts and Collection Expense	1,974.32	1,487.73	486.59
9. Addressograph Expense	1,816.98	1,803.08	13.90
10. Postage and Mailing	4,362.02	3,979.84	382.18
11. Rent	1,956.00	1,956.00	.....
12. Telephone and Telegraph	1,161.71	801.29	360.42
13. Salaries	15,480.25	14,292.17	1,188.08
14. Office Supplies and Sundry Expense	747.70	226.13	521.57
TOTAL EXPENSES	$122,492.99	$101,402.08	$ 21,090.91
Surplus	$ 24,984.50	$ 20,410.71	$ 4,573.79

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

(A California Corporation)

BALANCE SHEET, JUNE 30, 1951

ASSETS

CASH (including Trust Funds)	$ 22,400.24
INVESTMENTS (including Benevolence Fund Investments)	1,065,000.00
TOTAL	$1,087,400.24

LIABILITIES

TRUST ACCOUNTS:			
Benevolence Fund		$ 30,832.78	
Morris Herzstein Bequest Fund		5,743.29	
Total			$ 36,576.07
ENDOWMENT FUND			276.74
SURPLUS:			
Contributed Surplus		$882,915.99	
Earned Surplus:			
Balance, June 30, 1950	$142,882.19		
Net Income for year, Exhibit B	24,749.25	167,631.44	
Total			1,050,547.43
TOTAL			$1,087,400.24

EXHIBIT B

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

STATEMENT OF INCOME FOR THE YEAR ENDED JUNE 30, 1951

INCOME—INTEREST ON BONDS		$25,694.86
EXPENDITURES:		
Premium on bonds purchased	$378.13	
Audit fee	300.00	
Custodian fee	178.75	
Miscellaneous	88.73	
TOTAL		945.61
NET INCOME		$24,749.25

REPORTS OF DISTRICT COUNCILORS

FIRST COUNCILOR DISTRICT

San Diego County

To the President and the House of Delegates:

This is the first report of the First Councilor District, San Diego County, under the new constitution.

The growth of the San Diego County Medical Society has been great in the past ten years. The present active membership is 529 members and 60 applicants, representing an increase of almost 300 per cent in ten years.

With increase in size, there is an increase in problems and responsibilities.

During the past year, with the aid of the California Medical Association, the San Diego Blood Bank has been established and successfully operated as a member of the California Blood Bank Association. At the present time, this bank is supplying all of the civilian needs of San Diego County, and is actively engaged in the Armed Forces Blood program.

The civilian hospital bed shortage in this district will be greatly relieved with the building of a new 150-bed general hospital, which will be associated with a 50-bed annex, devoted to the care of children.

I have attended the Council meetings, the minutes of which have been duly published in CALIFORNIA MEDICINE.

It is my sincere desire to correlate the activities of the state and county societies.

Respectfully submitted,

FRANCIS E. WEST, *Councilor, First District*

SECOND COUNCILOR DISTRICT

Imperial, Inyo, Mono, Orange, Riverside and San Bernardino Counties

To the President and the House of Delegates:

The visit of President-elect Lewis A. Alesen to the Inyo-Mono County Medical Society and those of President H. Gordon MacLean to the other more southern county societies in the District have been well received and it is generally felt that these visitations are of great benefit not only to the membership but also to the members of the Woman's Auxiliary.

The second annual session of the Southern Counties Regional Medical and Surgical Institute in the Arrowhead Springs Hotel at San Bernardino July 17, 18, 1951, presented a diversified program of great merit. Too much credit cannot be given Dr. Edward C. Rosenow and the working members of his committee. Dr. C. A. Broaddus, the Director of Postgraduate Activities, is to be particularly commended for his fine efforts in arranging these regional meetings over the state.

The November meeting of our local society was arranged and sponsored by the local unit of the American Cancer Society. This lay organization is doing a fine piece of work and should be encouraged by the scientific organizations. An annual meeting of this kind in all societies in the district would result in mutual benefit to both organizations.

Probably nothing has stimulated more interest in medicine on the part of the laity than the recent Clinical Session of the A.M.A. held in Los Angeles. The television and radio broadcasts of the speeches of Senators Taft and Byrd have brought favorable comment from nearly all of our patients. Again Whitaker and Baxter should be congratulated for arranging this fine presentation. A great interest has also been evidenced in the operative surgery televised.

The Council continues to function effectively under the able chairmanship of Dr. Sidney J. Shipman. The published reports and proceedings of the meetings are already in your possession in CALIFORNIA MEDICINE.

Respectfully submitted,

JOHN D. BALL,* *Councilor Second District*

* Dr. Ball died December 20, 1951.

THIRD COUNCILOR DISTRICT

Los Angeles County

To the President and the House of Delegates:

As a freshman member of the Council I have been agreeably pleased with observing intimately the functioning of the governing body of our association. Every item is painstakingly studied and debated and outside experts are freely called upon, so that every phase of every problem can be viewed in the best light. I feel that the members of our association can feel very comfortable about the operations of our headquarters, and can feel confidence in the integrity and fidelity of its servants.

During the year of 1951 I have attended every meeting of the Council.

Respectfully submitted,

H. CLIFFORD LOOS, *Councilor, Third District*

FOURTH COUNCILOR DISTRICT

Los Angeles County

To the President and the House of Delegates:

This has been a year of change in which the constitutions of both the California Medical Association and the Los Angeles County Medical Association have been changed in an effort to give a wider distribution of representation to the outlying districts.

To this end, the delegates from the various districts are now elected by the members in that district. This, in the end, will give a more direct representation of the practitioner in each locality and in time the delegates themselves will recognize their responsibilities and will be more attentive to their duties.

All delegates who attend the meetings of the House of Delegates and other meetings that are held, should familiarize themselves not only with the political situations involved but also familiarize themselves with the scientific and public relations aspects of their duties.

Respectfully submitted,

J. PHILIP SAMPSON, *Councilor Fourth District*

FIFTH COUNCILOR DISTRICT

San Luis Obispo, Santa Barbara and Ventura Counties

To the President and the House of Delegates:

As Councilor for the Fifth District I have attended all the meetings of the Council of the California Medical Association since my election.

It was my pleasure to accompany Dr. MacLean, Mr. Hunton, Mr. Read and Mr. Pettis on their visits to the local societies. These visits were well received and are a valuable means of furthering good will between the county and state societies. They acted as an additional stimulus to public relations programs in this area and as a result the basic tenets of the statewide plan will be implemented.

The blood bank, which is sponsored jointly by the societies of this district, has successfully completed its first year of operation. Early technical and administrative difficulties have been almost eliminated. The bank is cooperating with the Armed Forces blood program and the relationships with the other interested groups are gradually improving.

The officers of the local societies are cognizant of the many problems of the profession and will continue their efforts to help solve them.

Respectfully submitted,

A. A. Morrison, *Councilor*
Fifth District

SIXTH COUNCILOR DISTRICT

Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tulare and Tuolumne Counties

To the President and the House of Delegates:

During the past year, I have attempted to attend all the meetings of the Council, and have tried to visit the different societies in the Sixth Councilor District. The Sixth Councilor District is honored by having Kern County added to our district and also pleased in having a new medical society formed in Madera County. The non-partisan Public Health League for procurement of a better government will continue to be active in the future.

Fresno County also has a new executive secretary, Mr. Roy Jensen, relieving Mr. Glenn Gillette who has been promoted to a better position with the California Medical Association.

Respectfully submitted,

Neil J. Dau, *Councilor*
Sixth District

SEVENTH COUNCILOR DISTRICT

Monterey, San Benito, San Mateo, Santa Clara, and Santa Cruz Counties

To the President and the House of Delegates:

This year has again seen a large increase in the number of doctors in the district. With this increase has come more and more pressure for hospital bed space. At the present time, there is an acute shortage of bed space which does not seem remediable. Although there are several new hospitals in the planning stage, costs have increased to such an extent that new bond issues are necessary to obtain needed funds for some of the contemplated district hospitals. The question of staff appointments to various hospitals is becoming a very acute problem—especially is this true of privately owned hospitals and in hospitals with closed staffs. This situation in itself may actually cause a decrease in some communities of the influx of new medical men.

Throughout the district there is now a wide dissemination of specialists in all fields, with a resultant rise in the quality of medicine available.

The Seventh District has always been interested and taken an active part in hospital and medical insurance care plans. Santa Clara County this year has developed and discussed a deductible type of policy for medical care that may be given a trial run in Santa Clara County.

The officers of the State Society have visited all the counties in this district this year and the response has been most favorable. The attendance at the meetings has been excellent and a closer liaison between the state and county societies, I feel, will definitely result from such meetings.

Two of the counties of this district now have full-time executive secretaries with the resulting improvement in the public relations program in those counties. It is hoped that at least two more of the counties will soon employ an executive secretary.

Respectfully submitted,

Hartzell H. Ray, *Councilor*
Seventh District

EIGHTH COUNCILOR DISTRICT

San Francisco County

To the President and the House of Delegates:

The year 1951 has been a very active one for the San Francisco Medical Society. In fulfillment of the provisions of the new constitution adopted in December 1950 election the society started the year with a president-elect and an assistant secretary-treasurer, as new members of the official family. The new provisions have already paid dividends in adding two able men to the leadership of our county group.

Considerable progress has been made in the discussions with representatives of union labor regarding medical care plans.

The program for better public relations carried out under our Bureau of Medical Economics has continued to pay off in the closer relationship of the doctors to their society and a better understanding between our profession and the public we serve.

A word should be said for the paid staff that has contributed so greatly to the smoothness of operations.

Finally the high point in the year was, of course, the inauguration of one of our members, John W. Cline, as president of the American Medical Association.

The year 1952, under the leadership of Stacy R. Mettier, gives promise of continued progress. The new administration has gotten off to an auspicious start.

Respectfully submitted,

M. Laurence Montgomery, *Councilor,*
Eighth District

NINTH COUNCILOR DISTRICT

Alameda and Contra Costa Counties

To the President and the House of Delegates:

Integration of Contra Costa County into the Alameda-Contra Costa Medical Association program of public service and public relations has been one of our projects during 1951.

Partial completion of this project is evidenced by newspaper advertising in central Contra Costa County during the year and by cooperation with public medical facilities toward our guarantee of "Medical Care for All, Regardless . . ." Telephone emergency systems have been placed on an organized basis and now are solving that problem in Contra Costa County.

This work, as well as the application in Contra Costa of other aspects of the original A.C.C.M.A. program, is proceeding and should be completed this year.

Work is also going forward on the study by Ernest Dichter of the physician-patient relationship with emphasis on utilization of the information which has been produced. Each step forward in this work opens new horizons of opportunity—more things that can be done toward better understanding between the doctor and the public.

The A.C.C.M.A. assisted the C.M.A. in indoctrination of the public relations field representatives who are charged with adapting the A.C.C.M.A. public service and public relations program for statewide use.

Concrete public recognition of our work was the 100-station broadcast over the NBC network in June, entitled

"All Their Powers." This was the story of the work done by the A.C.C.M.A. over the past five years, given in dramatic form, with the physicians who did the work telling their own stories.

An even more concrete result of our work, however, has been increased evidence of real understanding and approval from the press and public of our efforts and motives. These evidences appear in our excellent personal relationships with the press, and in unsolicited gratifying comments from many sources.

Respectfully submitted,

DONALD D. LUM, *Councilor, Ninth District*

TENTH COUNCILOR DISTRICT

Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Solano and Sonoma Counties

To the President and the House of Delegates:

The year 1951 saw no unusual problems confronting the members of our association in my district, and, as a result, the duties of the Councilor were pleasant and not at all arduous.

Outstanding activities consisted of the usual four-county meeting of Sonoma, Marin, Napa and Solano counties, held at the Meadow Country Club, at which Marin County was host. The very interesting address of President John W. Cline of the A.M.A. was instructive and heartening to all those present. The meeting was conducted very ably by the president of the Marin County Medical Society, Dr. Warren L. Bostick. There appeared to be in excess of a hundred persons present.

The visits of the President-elect, Dr. Lewis Alesen (California Medical Association) of Los Angeles to Solano, Napa, Humboldt, Mendocino-Lake, and Sonoma counties were very inspiring meetings. Dr. Alesen was accompanied by Ed Clancy and Glenn Gillette of the public relations staff of the C.M.A., and Mr. Ben Read, Executive Secretary of the Public Health League of California. In most instances, the meetings were well attended. John Hunton, Executive Secretary, attended the Vallejo meeting and was very helpful. It is the opinion of your Councilor that these meetings with state officers are of interest to the local groups and are advantageous to the state Association as a whole. We suggest that members of the Auxiliary be invited to attend all such gatherings. We heard many compliments from the ladies concerning the remarks of President-elect Alesen, and we feel that the work of the Auxiliary will be more effective if their members are given an opportunity to come in more intimate contact with state officials more frequently.

In December, Napa County Medical Society gave a wonderful testimonial dinner for Dr. D. H. Murray, Legislative Chairman of the C.M.A. and Chairman of the Board of Trustees of the A.M.A. Many prominent guests were present, representing all segments of community life. Dr. Cline expressed the delight which was his in being able to be present to honor Dr. Murray and to express the thinking and the policies of the A.M.A., in which Dr. Murray plays such a prominent part. Dr. Sidney J. Shipman, Chairman of the Council, and Dr. Francis Scott Smyth, Dean of the University of California School of Medicine, San Francisco, and Dr. Anthony Diepenbrock and Dr. Robertson Ward contributed to the pleasure of the evening and were aided by such persons as State Senator Nathan Coombs of Napa County and Assemblyman Ernest Crowley of Fairfield. Dr. Lawrence Welti of Napa, in the absence of the mayor, presented the address of welcome and the chairman of the Board of Supervisors, Mr. Eddington, responded for the County of Napa. Mr. Ben Corlett, past president of the California Bankers Association and now vice-president of the American Trust Company of San Francisco, gave an especially interesting and talented talk on a "Free Society vs. Socialism" which I am sure every man enjoyed.

Ben was formerly of Napa, and later on, state commissioner of banks of California. There were representatives of the staff of the State Hospitals at Imola and the Veterans Home of Yountville. This meeting was ably arranged for by Dr. George Dawson and Dr. Robert Northrup, secretary of the Napa County Medical Society, who presented Dr. Murray with a set of beautiful matched pipes, in the name of the society. Dr. Mike Boothe of St. Helena read many telegrams and letters of regret from persons unable to attend the dinner. The remarks of Dr. Murray, when called upon, were typically "Murrayian" and enjoyed by all who were present. The group was proud to have John Hunton, Ben Read, Ed Clancy, and Glenn Gillette present to make the occasion a most enjoyable event. We still have one visitation to make in February 1952, to the Marin County Medical Society, when our tour of duty will have been completed.

Respectfully submitted,

JOHN W. GREEN, *Councilor, Tenth District*

ELEVENTH COUNCILOR DISTRICT

Alpine, Amador, Butte, Colusa, Eldorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, Yolo and Yuba Counties

To the President and the House of Delegates:

The proposed public relations program with emphasis on activities at the local level has been explained by the C.M.A. representatives to the doctors of the 20 counties comprising this district. It is apparent that if this program is to fulfill its ultimate possibilities, considerable individualization to meet local conditions will be necessary. It is also obvious that its ultimate success will depend on the energy, personality, and ability of those entrusted with its administration. Inasmuch as the activities of these C.M.A. public relations representatives should provide much closer liaison between the county societies and the state association, the present policy of annual visits by C.M.A. officers might well be reviewed. These visits are unquestionably valuable, and appreciated, but they are time-consuming and expensive. It would seem doubtful whether they are actually necessary and desirable every year.

Six new hospitals have been built, or are under construction in this area, but several of the larger cities are still short of hospital beds. There are no shortages of doctors, and new men are constantly coming to this section of the state.

Respectfully submitted,

WAYNE POLLOCK, *Councilor, Eleventh District*

REPORTS OF COUNCILORS-AT-LARGE

NOTE: The report of Dr. Sidney J. Shipman as Councilor-at-Large is made a part of his report as Chairman of the Council.

To the President and the House of Delegates:

I have attended and participated in all Council meetings of the past year and of the several committees assigned.

Respectfully submitted,

C. V. THOMPSON, *Councilor-at-Large*

To the President and the House of Delegates:

A number of bills were introduced by the Board of Medical Examiners in collaboration with the California Medical Association, with the result that the practice of medicine is now more clearly defined, and the requirements for examination have been completely modernized, leaving out such terms as "materia medica," etc.

A large amount of time was spent with the psychologists, who are anxious to have official recognition. It is to be hoped that legislation eventually will be worked out so this group will be *registered* with the Board of Medical Examiners, rather than *licensed* by a board of their own.

Respectfully submitted,

WILBUR BAILEY, *Councilor-at-Large, Member, State Board of Medical Examiners*

To the President and the House of Delegates:

As Councilor-at-Large I have attended the meetings of the Council of the California Medical Association and have taken part in the discussions and decisions of the Council. I have also carried out committee and other assignments.

In addition, as director of the San Francisco County Medical Society, I have endeavored to correlate state and county organizations.

Respectfully submitted,

IVAN C. HERON, *Councilor-at-Large*

To the President and the House of Delegates:

During the past year I have attended the Council meetings and have visited, along with the C.M.A. officers, county medical societies in Southern California. The matter of C.P.S. and prepaid health insurance in general, along with other vital matters have been studied, discussed and then voted upon in the best judgment of the Council. In the sudden death of Dr. John Ball, Councilor from the Second District, we have lost a fine friend and Councilor.

The published reports and proceedings of the meetings of the Council attest to the serious thought given to the affairs of the Association by all of the elected officers and employees.

Respectfully submitted,

ARTHUR E. VARDEN, *Councilor-at-Large*

To the President and the House of Delegates:

Having been in regular attendance at the Council meetings for the year 1951, I can assure the membership that the work done and the accomplishments achieved are in line with the high standards set forth by the organization which we represent.

The place of medicine in state and national affairs is an enviable one, and we carry on in 1952 with the hopes of a real victory.

BEN FREES, *Councilor-at-Large*

REPORTS OF COMITTEES

EXECUTIVE COMMITTEE

To the President and the House of Delegates:

The Executive Committee has held meetings between Council meetings and such special meetings as were necessary to act upon matters which needed prompt attention. The minutes of the Executive Committee have been presented to the Council for approval and have been subsequently published in CALIFORNIA MEDICINE.

The Council has delegated to the Executive Committee the duty of reviewing the public relations program and authorizing necessary expenditures to the carrying out of that program. All actions are subject to confirmation by the Council.

All members of the Executive Committee have been most attentive and cooperative in their work.

Respectfully submitted,

DONALD D. LUM, *Chairman*

COMMITTEE ON ASSOCIATED SOCIETIES AND TECHNICAL GROUPS

To the President and the House of Delegates:

There have been no meetings of the committee during the past year and no communications have reached me as chairman of the committee from the California State Nurses Association, or from any other society or technical group. No specific action by the committee has been requested by the Council.

Respectfully submitted,

ROBERT A. SCARBOROUGH, *Chairman*

AUDITING COMMITTEE

To the President and the House of Delegates:

The budget for the fiscal year 1951-1952 was presented.

The budget for the coming year is now under study for presentation at the annual meeting. Expenditure items are reviewed month by month.

An audit made by our certified public accounting firm found all records to be in good order. Recommendations as to minor business procedures have been placed in effect.

Respectfully submitted,

DONALD D. LUM, *Chairman*

COMMITTEE ON HISTORY AND OBITUARIES

To the President and the House of Delegates:

The continuing growth of our state association brings with it the inevitable increase in the number of our members who have passed on to their final reward. During the past year our secretary has listed 125 deaths, by far the largest toll of any one year.

It is impossible for any state committee to properly note the many distinguished achievements of these members, and yet a record should be maintained in our central files which would show more than a mere date of death and year of graduation and license to practice. There should be an active committee in each county component whose privilege (not duty) is to compile and send in to the state secretary a reasonably complete biography.

In San Joaquin County, for example, for the last 35 years, a time has been reserved at the first regular meeting following the death of a member at which time the chairman of the local committee on History and Obituary gives a carefully prepared, accurate tribute to the departed member. This record contains not only statistical data of place and date of birth, early education, medical school, postgraduate hospital or special training, places of practices, contributions to literature or teaching positions, hospital and society affiliations, but also lists hobbies, community service rendered, marital history and any personal outstanding characteristics of the individual.

This custom has through the years, in this county society, been well received by the members and has greatly impressed any visitors attending these meetings. A copy of the

remarks sent to the family also is deeply appreciated. We fully realized that the larger county units could not give the time each month at their general meetings but either through an active committee or the paid office staff could gather the data and see that it reached headquarters. With the exception of a few of the very large county units we urged the adoption of the method followed in San Joaquin County.

The list of 125 members contains the names of members nationally and internationally known for their brilliant contributions to our professional knowledge, and even the most humble will leave patients, friends and family who feel a keen sense of personal loss. May we, who carry on, maintain the high standards of our profession, as they would have us do.

Respectfully submitted,

DEWEY R. POWELL, *Chairman*

COMMITTEE ON HOSPITALS, DISPENSARIES AND CLINICS

To the President and the House of Delegates:

The Committee on Hospitals, Dispensaries and Clinics held a meeting on December 1, 1951, to discuss matters which had been placed before it for consideration and report. Since this committee is of an advisory nature only, reports will be made to the Council after the completion of our studies.

Respectfully submitted,

JOHN B. HAMILTON, *Chairman*

COMMITTEE ON INDUSTRIAL PRACTICE

To the President and the House of Delegates:

During the year 1951 no problems have been referred to the Committee on Industrial Practice by the Council or the House of Delegates. No meetings of the committee were held during the year, no business was transacted and there is no unfinished business.

Respectfully submitted,

JEROME W. SHILLING, *Chairman*

COMMITTEE ON MEDICAL DEFENSE

To the President and the House of Delegates:

The Committee on Medical Defense has had no meeting during the past year, and no communication or business has been referred to the committee for action.

Respectfully submitted,

H. CLIFFORD LOOS, *Chairman*

COMMITTEE ON MEDICAL ECONOMICS

To the President and the House of Delegates:

The Committee on Medical Economics wishes to submit the following report for its activities of the past year:

The projection of the Dichter Report, entitled "Doctor and Patient," by Rollen Waterson, executive secretary of the Alameda-Contra Costa Medical Association, was published in essay form and sent to all the members of the California Medical Association.

The "Doctor and Patient" has received wide recognition. As a consequence, Dr. Dichter was invited to appear on the program of the National Public Relations Committee of the A.M.A. He outlined work done in California and set the stage for national consideration. The Dichter report projection has received wide publicity. It was the subject of a lead article in the Journal of the Academy of General Practice. It also was given similar treatment by the periodical *Medical Economics.* Various medical societies throughout the nation have given recognition.

It is hoped the work started three years ago will be continued and expanded in the future with the California Medical Association continuing its role of leadership.

Respectfully submitted,

ARTHUR A. KIRCHNER, *Chairman*

COMMITTEE ON MEDICAL EDUCATION AND MEDICAL INSTITUTIONS

To the President and the House of Delegates:

A meeting of the Committee on Medical Education of the California Medical Association was held on January 10, 1952, at the St. Francis Hotel, San Francisco. In attendance at the meeting were: Dr. Loren Chandler, Dr. Stafford Warren, Dr. W. E. Macpherson, Dr. Dwight Murray, Dr. H. Gordon MacLean, Mr. John Hunton, Mr. Howard Hassard, Mr. Ed H. Clancy, and Mr. Robert L. Thomas. Absent were: Dr. Laurence Montgomery and Dr. Lewis T. Bullock.

The subject of a proposal to amend the Business and Professional Code so as to control the influx of foreign students in the field of medicine was discussed. It was emphasized that the proposal was designed so as to meet the desirability of aiding medical education in foreign countries without encouraging permanent *licensure* or residence of graduates of foreign schools, many of which need help because they are (by comparison) substandard. Attention was drawn to the increasing number of students in all fields who are brought to this country with the intent of good international relations by Fullbright, Smith-Mundt and Foundation subsidies through the Conference of Resident Councils of the International Education Exchange, et al. The need for cooperative clarification regarding the American system of medicine and medical licensure has been recognized by the Association of American Medical Colleges, the Council on Medical Education and Hospitals of the American Medical Association and the Association of State Boards of Licensure.

1. The committee approved the intent of the legislation and recommended that the proposed amendment (see below), subject to more definitive legal references and additions, be submitted to the Council of the California Medical Association and the Board of Medical Examiners.

PROPOSED AMENDMENT

As a *preamble* to the proposed amendment to Section 2147.5 of California legislation relating to medicine and surgery, the following may be considered:

"An amendment is desired which will assist members of teaching staffs elsewhere, who seek to further their knowledge in the newer techniques of medical education, and thus improve the standards of medical education in other countries."

Proposed amendment (now being considered by C.M.A. counsel):

"Physicians with visitors' visas, seeking postgraduate study in an approved medical school of California either as a fellow, assistant instructor, or exchange professor; after proper application and approval by the State Board of Medical Examiners and appointment of such an applicant by the Dean of the approved medical school may obtain a permit to participate in the activities of the department to which he is appointed under the direction of the chairman of that department for the duration of his appointment by the university.

"This permit shall not exceed one year, and must be renewed semi-annually. This work shall in no case be accepted as a substitute for the year's internship required in examination for licensure."

At a meeting of the Advisory Board, Dr. Ed Bruck expects to have a statement on any changes which are required in the proposed amendment.

2. The problem regarding the relationship of osteopaths to postgraduate, postdoctorate educational programs, particularly those of the State University Extension Division, was presented. The committee recommended that this matter be referred to the California Medical Association for long-range policy analysis and action.

3. The Stanford and University of California Schools of Medicine in San Francisco presented the situation created by the request of the Western Medical College (drugless practitioners) that the San Francisco Supervisors permit the use of the San Francisco Hospital for the students of the Western College of Medicine.

4. The committee requested that the attention of the Association of American Medical Colleges, the Council on Education of the American Medical Association, and the Association of State Boards of Licensure be called to the increasing number of American students attending foreign medical schools. It was suggested that academic colleges be informed regarding the difficulties of licensure, etc., for such students, so that advisors and pre-professional counsel might dissuade and deter, if possible, this ill-advised and growing program.

Respectfully submitted,

FRANCIS SCOTT SMYTH, *Chairman*

COMMITTEE ON MILITARY AFFAIRS AND CIVIL DEFENSE

To the President and the House of Delegates:

At the 1951 Annual Session, House of Delegates of the California Medical Association, the Constitution was amended to provide for a new standing committee. This new committee to be known as the Committee on Military Affairs and Civil Defense. This new committee replaced the Emergency Medical Services Committee and in addition provided for Military Affairs.

The members appointed to this committee are as follows: Frank F. Schade, Los Angeles (1952); William L. Bender, San Francisco (1953); Justin J. Stein (chairman), Los Angeles (1954).

CIVIL DEFENSE

The California Medical Association has: (1) Participated in atomic energy training courses regarding medical aspects of atomic warfare; (2) kept abreast of civil defense activities in the state in meetings with the Citizens Medical Advisory Committee and with the California Disaster Council; (3) sent representatives to medical civil defense conferences sponsored by the Council on National Emergency Medical Service of the American Medical Association; (4) correlated its activities with those of dental, nursing, veterinarian and other such organizations through memberships in the Citizens Medical Advisory Committee of the California Disaster Council; (5) encouraged the presentation of lectures on Civil Defense at medical meetings; (6) helped plan civil defense exhibits (soon to be available) for use at Civil Defense meetings; (7) helped in the planning and organization of a blood and blood derivatives program (the California Medical Association has been very active in this phase of civil defense); (8) taken part in radiological safety advisory committee planning; (9) arranged to conduct refresher courses for county medical civil defense committees; (10) assisted in the preparation of the following manuals:

Manual for Emergency Field Treatment of Casualties. This manual outlines standardized treatment procedures for use in the field. It will be 4 x 6 inches in size and circulated to all interested groups.

Hospital Disaster Plan Guide for Existing Hospitals. Recommendations for the organization of hospital facilities and personnel are given in detail.

Plan for Operation of a First Aid Station.

Hospital Plan of Operation for Improvised Hospitals.

Fundamental points regarding the medical aspects of Civil Defense in California are presented in an article on this subject in the January 1952 issue of CALIFORNIA MEDICINE.

Submitted by JUSTIN J. STEIN

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MILITARY AFFAIRS, NORTHERN CALIFORNIA

This is to summarize the activities of Northern California Advisory Committees for the last six months of 1951 and to forecast the events of the coming months insofar as that is possible.

ADVISORY TO THE SELECTIVE SERVICE SYSTEM:

Since deferments of Priorities 1 and 2 registrants have been limited, usually to six months, review of these cases at the end of the deferment-period has been a continuing process. You will note from Tables I and II that occupational deferment of physicians in Classification II-A, with which the advisory half of the program has been concerned chiefly to date, has decreased from 18.9 per cent for the nation and 20.7 per cent for California, up to May 31, 1951, to 6.4 per cent for Northern California, as of December 31, 1951. Current figures for the other areas are not yet available to us but may be assumed to show a similar proportion of occupational deferments. The sharp decrease may be attributed largely to the availability of hospital interns and residents at the end of the year of training for which they had been deferred, June 30, 1951. Such trainees still account for most of the medical deferees and the percentage may be expected to decrease further at the end of the current academic year June 30, 1952.

The tables give full details. Table I reports on physicians while II includes dentists as well.

TABLE I

Number of Priority 1 Physicians by Classification for Continental U. S. and California as of May 31, 1951

	Continental U. S.	California	Per Cent of Continental U. S.
Total—living registered	10,287	860	8.4
Total—classified	10,246	856	8.4
I-A and I-A-O examined and accepted	1,804	101	5.6
Total—other classification	8,442	755	8.9
Not examined	790	111	14.1
Postponed	37	.....	....
IV-E	23	1	4.3
I-C-Enlisted	1,591	105	6.6
I-C-Discharged	1	.....	....
I-D	2,182	197	9.0
II-A	1,940	178	9.2
III-A	122	9	7.4
IV-A	42	7	16.7
IV-F	1,709	146	8.5
V-A	2	.....	....
Disqualified—physical and mental	3	.....	....
Disqualified—morals	.....	.....	....

It is estimated that Medical Priority 1 will have been exhausted by April 1952, when Priority 2 will become subject to induction. Since there have been only 76 registrants in 2, compared with 430 in 1, Priority 3 should become vulnerable much sooner. So far there have been no official estimates of the date. Priorities 3 and 4 have not yet been

classified. The small number, 28, of Priority 1 acceptable (Table II, Item 3) simply indicates that these few have not yet received a commission, compared with those in I-C and I-D (Items 7 and 14), plus a surprising proportion of IV-F classifications. As you know, every effort has been made to stimulate application for a commission in lieu of induction; we have heard of only two actual inductees in the nation.

TABLE II

Selective Service System—Summary of Classification Special Registration No. 1—California—Northern Area

Classifications	Medical Pr. 1	Medical Pr. 2	Dental Pr. 1	Dental Pr. 2
1. Total living special registrants	432	76	162	9
2. Total classified special registrants	430	76	162	9
3. I-A and I-A-O examined and acceptable	28	25	11	1
4. I-A and I-A-O not examined	10	3	2	....
5. I-A Postponed	....	....	....	....
6. I-C (Inducted)	....	....	....	....
7. I-C (Enlisted or commissioned and on extended active duty)	138	2	63	2
8. I-C (Discharged)	....	....	....	....
9. I-C (Reserve)	....	....	....	....
10. I-O Examined and accepted	....	....	....	....
11. I-O Not examined	1	....	....	....
12. I-W	....	....	....	....
13. I-W (Released)	....	....	....	....
14. I-D (Reservist)	111	10	52	3
15. II-A (Occupational deferment)	28	18	7	....
16. III-A	5	1	4	....
17. IV-A	2	....	....	....
18. IV-D	....	1	....	....
19. IV-F (Physically, mentally or morally unfit)	107	16	23	3
20. V-A	....	....	....	....
21. Total canceled	11	2	....	....

While much of the activity, as far as Advisory Committees are concerned, has been among the medical registrants, you will note a proportionate number of dental registrants hold commissions. Veterinary registrants are in less military demand up to the present time but recently we note some increase.

Of interest to all three professions is the recent graduate who has had no active duty and therefore becomes a special registrant in Priority 3. However, many are under the age of 26 and therefore were regular registrants before graduating. These men are considered doubly liable for active military duty and advised to apply for a commission with the request for immediate active duty, after an internship in the case of a medical registrant. The number of such individuals is expected to increase annually.

Another important consideration is the return of medical, dental and veterinary officers to civilian life after the allotted period of service has been completed. Much is expected of this rotation to provide replacements particularly for hospital residents, teachers and in isolated communities. The Korean war started about the first of July 1950, reserve officers were being called up soon afterward and are expected to start returning in appreciable numbers by summer. The following is the current schedule of release:

The Department of the Navy is using the following policy in regard to release from service of physicians and dentists (former registrants and reservists):

Priority I	24 months
Priority II	12-24 months
Priority III	24 months
Priority IV:	
(12 months during World War II)	12-17 months
(Less than 12 months during World War II)	12-24 months

The Department of the Army is operating, at present, on the following program:

Any physician or dentist who served 12 months during World War II becomes eligible for release after 17 months of current service, except those called in Organized Reserve Units, who will serve the full 24 months.

The Department of the Air Force is operating, at present, on the following program:

Any physician, dentist or veterinarian may request release after 21 months of service. If he was in Priority I or II, the 21 months must be during the present term of service.

Several requests for deferment because of research or teaching have been difficult of solution by both local and state committees, sometimes with a difference of opinion. Some have been referred to the national committee for recommendation.

As a period of deferment ends, each case is to be reviewed for availability of the registrant for active military duty; he is reclassified in I-A unless the advisory committees find cause for granting another period of deferment (up to six months), and such recommendation is accepted by the local draft board. Usually the request for review comes to the Northern California Advisory Committee office and the Forms A are sent to the local Advisory Committees for completion. If the draft board makes the request directly to the local committee, procedure may be initiated there. In either case, completed forms are returned to the Northern California Advisory Committee office for review and transmittal to the Selective Service System. If the local advisory committees wish to know the result of a recommendation, or when a deferment period ends, we will be glad to get this information to them on request.

ADVISORY TO THE ARMED FORCES

This function of the advisory committees proceeds as outlined in a letter of instruction of May 10, 1951. A reserve officer recalled to active duty by any of the three services may request delay in activation, in which event the service refers the case to the advisory committees for recommendation and we follow the same procedure as with a Selective Service registrant's request for deferment.

In addition, the Health Resources Advisory Committee (same personnel as our National Advisory Committee) on several occasions has sent lists of Naval Reserve dentists or physicians for our opinion on their essentiality in civilian practice or their availability for military duty. These names are sent from this office to the local advisory committee concerned for investigation and recommendation.

Submitted by WILLIAM L. BENDER

MILITARY AFFAIRS, SOUTHERN CALIFORNIA

1. Deferments of Priority I and Priority II special registrants have been limited, usually to six months or less. At the end of the deferment period, individual cases are again reviewed.

2. It has been estimated that Medical Priority I will be exhausted by April of 1952, at which time Priority II special registrants will become vulnerable. As there is a total of only 86 Priority II medical registrants as compared with an original total of over 400 in Priority I, Priority III will become vulnerable in a much shorter period of time than estimated primarily. However, no official estimates of this date have been made.

3. The recent graduate who has had no active duty and therefore becomes a special registrant in Priority III has a dual liability for military service if he is under 26 years of age (Doctor Draft and the Universal Military Training and Service Act, as amended). If he has been deferred by reason of internship, student classification, etc., on or after June 19, 1951, his liability is extended to 35 years of age.

In regard to these individuals, local boards are being advised to defer only until the completion of the first year of internship, at which time the registrant is advised to apply for a *commission* and *immediate active duty* so that the period of obligated military duty may be completed at a convenient time. If they do not apply for active duty simultaneously they will become Priority II reserve officers which *will not* relieve them of their liability under the general provisions of the Universal Military Training Act until the advent of their thirty-fifth birthday.

4. Citizens of Canada, and some other countries which do not have special treaty arrangements, who enter this country as aliens on a visa to accept employment such as a residency and who hold an M.D. degree, must register as special registrants within five days of the time of their entry into this country. Such aliens who have not attained their twenty-sixth birthday must also register as regular registrants within six months from the date of entry. After registration and unless otherwise entitled to a deferment, they will be liable for induction into the armed forces on the same basis as citizens of the United States. (Most of them will fall into Priority III as special registrants.)

5. When requesting a second delay of reserve officer, we have been advised to ask for resignation and hold individual as a special registrant under Selective Service.

6. The Health Resources Advisory Committee periodically sends lists of medical, dental and veterinarian Reservists for our opinion on essentiality in civilian practice or their availability for military duty. These names are sent from this office to the local county Advisory Committees for investigation. Recommendations are returned to us for review and transmittal to the Health Resources Advisory Committee, Washington, D.C., thence to the Service making the inquiry.

A reserve officer recalled to active duty by any of the three services may request delay in activation, in which event the service refers the case to the State Advisory Committee for recommendation. However, former Priority I and II registrants who were investigated and classified I-A by their local selective service board prior to accepting a commission, are assumed still available for active duty.

7. The Korean War started about the first of July 1950, and therefore many reserve officers who were called up soon afterward are expected to be released from service shortly and will be returning in appreciable numbers by summer. Much is expected of this rotation to provide replacements particularly for hospital residents and teachers, and in isolated communities.

(For the current schedule of release, see Northern California report on preceding page.)

TABLE III

First Priority (Medical) 1951—Showing quarterly the number within each classification.

	Mar.	June	Sept.	Dec.	Percentage of Reduction or Increase
*I-A	146	87	73	57	Reduced 62%
*II-A	97	124	83	69	Reduced 29%
*IV-F	22	49	79	111	Increased 80%
*I-D	49	81	86	91	Increased 46%
*I-C	12	13	81	117	Increased 90%

Total count as of December 31, 1951 454
(Including 8 classified I-AO—1 classified IV-A)

* I-A: Examined and Acceptable
II-A: Occupational Deferment
IV-F: Physically Unfit
I-D: Reserve Commissions
I-C: Active Duty

Our files show that as of January 15, 1952: 52 doctors are classified II-A. Seventeen of these II-A classifications expire on or before January 31, 1952. Eight of these II-A classifications expire on or before April 30, 1952. All but a very limited number will expire June 30, 1952.

8. The National Advisory Committee has authorized the appointment to State Committees of a representative of the nursing profession. The Southern California Advisory Committee welcomes Mrs. Helen Halverson, R.N., Los Angeles County Health Department, as our new member.

9. Included in this report is a chart showing classifications of Priority I Medical Registrants of Southern California for the year 1951 (see Table III).

Submitted by JOHN C. RUDDOCK

* * * * *

Respectfully submitted,

JUSTIN J. STEIN, *Chairman,*
Committee on Military Affairs and Civil Defense

PHYSICIANS' BENEVOLENCE COMMITTEE

To the President and the House of Delegates:

The Physicians' Benevolence Committee has carried on its regular activities in the past year. A complete financial report is shown below; this is self-explanatory and shows that the Benevolence Fund ended the 1951 calendar year with a surplus of $42,642.92, up $4,438.89 from a year earlier. Surplus funds are invested in U. S. Treasury bonds.

BENEVOLENCE FUND

RECEIPTS AND EXPENDITURES
January 1951 through December 1951

January 1, 1951, Balance:		
Cash		$11,205.03
U. S. Treasury Bonds		27,000.00
		$38,205.03
Receipts:		
Interest on U. S. Treasury Bonds	$ 675.00	
Contribution—Butte-Glenn County Woman's Auxiliary	50.00	
Contribution—Woman's Auxiliary, C.M.A.	2,648.13	
Contribution—C.M.A.	10,628.75	
		14,001.88
		$52,206.91
Expenditures:		
Benefits paid		9,562.99
		$42,643.92
December 31, 1951, Balance		
Cash	$15,643.92	
U. S. Treasury Bonds	27,000.00	
	$42,643.92	

During the past year the committee has been able to place one of its aid recipients in a veterans' home, where he is assured of constant care and medical treatment. Another recipient is gradually recovering from a long illness and should be entirely independent of outside assistance within a short while.

Aid has been given to five individual physicians or their families during 1951. At the same time, regular contributions have been made to the Los Angeles County Physicians' Aid Association, which has used these funds as a part of the benevolence program covering some forty recipients in that county. Regular reports are filed with the C.M.A. committee on the Los Angeles activities.

The committee wishes to express its heartfelt thanks to the Woman's Auxiliary for its continued support and interest. The Auxiliary has not only entered into special projects to raise funds for the Benevolence Fund but has been of extreme help in locating and social servicing needy cases.

The chairman wishes also to express his extreme thanks to the other committee members, Dr. Elizabeth Mason Hohl of Los Angeles and Dr. John W. Sherrick of Oakland, for their constant and ever-ready cooperation. In every instance both of them have responded immediately to any call for action.

Respectfully submitted,

AXCEL E. ANDERSON, *Chairman*

COMMITTEE ON POSTGRADUATE ACTIVITIES

To the President and the House of Delegates:

During the year of 1951 your Postgraduate Committee has continued the program already under way since 1950. At the convention of the C.M.A. the resignation of Dr. John C. Ruddock, as chairman of the standing committee on Postgraduate Activities was accepted. To fill this vacancy on the committee, Dr. John D. Ball of Santa Ana was appointed. It is with extreme regret that your committee reports the death of this valued member of the committee. Dr. Edward C. Rosenow, Jr., was appointed chairman. Dr. Andrews is a continuing member. Dr. C. A. Broaddus of Stockton was continued as director.

Since May, the chairman has had conferences with the director on numerous occasions and with other members of the committee individually. A meeting is scheduled for January for the whole committee.

The Regional Medical and Surgical Institutes have been extremely successful, and have been continued. In 1951 these were held in the following localities: The Southern Counties met at Riverside, January 25 and 26, with a registration of 146. The Sacramento Valley counties met at Sacramento, February 8 and 9, with a registration of 198. The North Coast Counties Institute met at Santa Rosa, March 8 and 9, with a registration of 88. The San Joaquin Valley counties met at Fresno, October 4 and 5, with a registration of 203. The West Coast Counties met at Santa Barbara, October 25 and 26, with a registration of 96.

In addition to these registrations there were from six to 15 interns and residents in attendance at each of these Institutes and a considerable number of registered and student nurses. Regional Institutes have been arranged for the opening months of 1952 to be held at San Bernardino, January 17 and 18, and at Santa Rosa, February 14 and 15, with another Institute in the Sacramento Valley counties at Sacramento, April 3 and 4.

In addition, the Postgraduate Committee has arranged to have single speakers at the following county medical society meetings: Merced, Stanislaus, Imperial, San Luis Obispo, Placer-Nevada, Tulare, Napa, Kings, Riverside, Kern and Yuba-Sutter. At these single lectures there was a total of 550 doctors in attendance.

Your director has also helped in the conduct of the Stockton Postgraduate Study Club, which arranged for a series of eight lectures during the months of September, October and November. The total registration for this program was 147, with an additional 22 interns, residents and premedical students.

The program for each Institute has been under the direct cooperation of an individual medical school, and the programs have been very well accepted. The Institutes have been classified by the American Academy of General Practice as acceptable to fulfill postgraduate requirements of general practitioners. Suitable attendance reports are available to general practitioners who wish credit for their Academy of General Practice requirements.

Another meeting with the Advisory Committee consisting of representatives from the medical schools as well as from the state society is planned for the early months of 1952. Your committee feels that the program initiated is of wide general interest and should be continued. Therefore, your committee requests the House of Delegates that the Council of the C.M.A. be directed to continue the allocation of funds for the support of this committee in making possible postgraduate opportunities for its members.

The California Medical Association may indeed feel proud of its part in fulfilling a real service to its membership by making this high-caliber postgraduate opportunity available to them.

Respectfully submitted,

EDWARD C. ROSENOW, JR., *Chairman*

See financial report below.

Financial Statement

Stockton Office Expense:		
Director's salary	$6,000.00	
Secretary	1,770.00	
Special help in office	85.00	
Miscellaneous supplies	87.87	
Postage—envelopes	464.93	
Stationery	10.57	
Office rent	600.00	
Telephone rental and tolls	128.02	
Printing (incl. stationery)	886.49	
Plastic badge cases	62.33	
Travel Expense:		
Director and Secretary—		
Hotel	385.28	
Auto and railroad	477.27	
Meals	299.19	
Total		$11,256.95
Speakers—5 Institutes—13 individual rural lectures:		
Honoraria	$2,300.00	
Travel expense	1,129.94	
		$ 3,429.94
Regional Committee's expense (travel and hotel). (This is for the meeting held in Los Angeles when representatives from each of five Regional Committees, each of five medical schools, and the members of the Standing Committee met for consultation; also covers expense of a meeting with the Advisory Committee in Los Angeles in May 1951.) (Balance includes luncheon and dinner meetings held with each Regional Committee in preparation for Institute programs.)		
Meals and travel expense		918.82
Exhibit at Annual Meeting—		
Labor, material and trucking		554.21
Refreshments during Institutes		370.00
Expense—Director to A.M.A. Convention, Atlantic City		451.72
Grand Total		$16,981.64
Income from Institutes—		
Riverside, Jan. 1951	$ 700.00	
Sacramento, Feb. 1951	990.00	
Santa Rosa, March 1951	440.00	
Fresno, Oct. 1951	1,015.00	
Santa Barbara, Oct. 1951	480.00	3,625.00
Cost to C.M.A., 1951:		
5 Institutes; 13 County Meetings		$13,356.64
Budget:		
First six months	6,000.00	
Second six months	7,500.00	
		$13,500.00

COMMITTEE ON PUBLIC RELATIONS

To the President and the House of Delegates:

As announced in the November 1951 issue of CALIFORNIA MEDICINE, the Council has established the new Public Relations Department and approved the grass roots public relations program presented by the Advisory Planning Committee.

The plan stresses two major points, "the provision of 'round the clock medical services regardless of ability to

pay, through the full use of existing local facilities, and the establishment and activation of Public Service Committees (Fee Committees or Ethics Committees) within County Medical Societies where patients may have a hearing and an answer to real or fancied complaints against a member of the profession."

Since the formation of the new department, public relations representatives have appeared with officers of C.M.A. and explained the plan to the members of the various County Societies. The program has been well received and it is highly encouraging to note the number of societies which have already—and voluntarily—inaugurated all or parts of the plan to better the relations of the profession with the public.

Routinely, the department has been of assistance in the publicity phases of C.M.A.'s activities, the Postgraduate Program and the Blood Bank Commission. Various services have, upon the invitation of society officers, been performed at the county level.

As announced by the Council, the new department is particularly designed to be of assistance to County Societies not having executive secretaries.

In Northern California, Mr. Glenn W. Gillette is "at the service" of northern societies. Mr. J. L. Pettis performs in a similar capacity in the south.

Respectfully submitted,

Ed Clancy, *Director*

COMMITTEE ON SCIENTIFIC WORK

To the President and the House of Delegates:

The Committee on Scientific Work held two meetings during the year as well as meeting with the section officers twice.

The 1952 Scientific Program will again be changed from previous meetings, and it is hoped that eventually the best schedule will be arrived at.

The first and opening meeting of the Scientific Program will be held on the afternoon of the first day following the meeting of the House of Delegates. In this way it is hoped that more will attend since the principal guest speakers appear at this time.

The tradition of a free afternoon to permit members to visit the scientific and technical exhibits and to provide time for the Golfing Association to meet was broken to allow the Public Health Section to meet. In the future more sections will probably need this time for meetings. The Committee on Local Arrangements was reactivated last year by the Council and the former's work was so excellent that it was felt advisable to continue with an active committee. In time this committee may become extremely useful to the Association, particularly as the meetings become larger.

The policy of not sanctioning meetings of other organizations during the state meetings has been maintained, but again not without difficulties, particularly from one or two organizations who feel that they should be permitted to meet at this same time.

Mr. Robert Edwards will be in charge of press coverage and there will be a "Meet the Press" luncheon on Saturday, April 26. At this time the press will be given an opportunity to review all papers with summaries written for laymen available for them.

Section executives last year were present at section meetings and they facilitated greatly the respective programs. They will again be called upon to provide the smooth inner workings of section meetings.

Respectfully submitted,

Albert C. Daniels, *Chairman*

ANNUAL REPORT OF THE CANCER COMMISSION

To the President and the House of Delegates:

The Cancer Commission has functioned actively during the past year to continue and expand a program of service to the people of California in achievement of early diagnosis and effective treatment of cancer. To this purpose, close cooperation has been maintained with the California Division of the American Cancer Society, with members of the commission continuing to take an active part on the board of directors, executive committee, and all other committees. The commission wishes to acknowledge the great assistance, financial and otherwise, rendered by the California Division of the American Cancer Society. It also wishes to commend the Medical Director of the Cancer Commission, Dr. Franklyn C. Hill, for his conscientious and efficient services.

Activities of the commission, accomplished and continuing, include the following:

1. Twenty-three cancer conferences have been held in 23 county medical societies, with a total attendance of 1,614 persons. This attendance comprised almost 55 per cent of the membership of the county medical societies concerned. The expenses of this program, totaling $3,725, were borne by the California Division of the American Cancer Society. A program for cancer conferences in 1952, in approximately 24 counties, is well under way.

2. Two refresher courses for the Southern California Dental Association have been scheduled and programs arranged.

3. A midwinter conference of Tumor Pathology was held in Los Angeles in December. The annual preconvention conferences in Tumor Pathology and in Radiology will be held immediately preceding the April meeting of the California Medical Association.

4. Fifty Consultative Tumor Boards, previously approved by the Cancer Commission, have been inspected during the year. Four more boards, having met the minimum requirements standards of the commission, have been approved.

5. With the approval of the Council, the Los Angeles County Tumor Registry has become the Tumor Tissue Registry, Cancer Commission, California Medical Association. This registry is developing rapidly, and should afford invaluable service to the members of the California Medical Association. Substantial financial support, originally aided by Federal funds, is now contributed by the American Cancer Society. Among the objectives of this registry are the following: (a) to serve as a consultative and advisory group to recognized pathologists whenever such service may aid in histologic diagnosis of neoplastic disease; (b) to establish a museum of tumors; (c) to establish a registry of tumors and to make material available for study by the pathologists of the state and at Cancer Commission conferences; (d) to prepare and distribute microscopic-study loan sets of tumors.

6. Arrangements have been made to renew, for a second year, distribution of the bimonthly journal *CA*, published by the American Cancer Society, to nearly five thousand physicians in general practice in the state, the cost to be shared equally by the Cancer Commission and the California Division of the American Cancer Society. The mailing list for this journal was revised after conducting a mail poll which disclosed that 7 per cent of recipients did not desire their subscription renewed. Any member of the California Medical Association may be placed on the mailing list by written request to the Cancer Commission.

7. The monograph "Cancer of the Esophagus and the Stomach" by Owen H. Wangensteen, M.D., has been dis-

tributed to 14,134 California physicians through the courtesy of the American Cancer Society. This is the third of a series of brochures on cancer in specific sites.

8. A new film, "Breast Self-Examination," produced and distributed by the American Cancer Society and approved by the Cancer Commission, has been shown during the year 1,951 times to a total lay audience of 72,379. Another film, "Uterine Cancer, the Problem of Early Diagnosis," should be available for use in the program of professional education in the very near future.

9. The Cancer Commission is deeply interested in a program to make *every private physician's office a center for detection of cancer.* A positive program of lay education, conducted by the American Cancer Society, has placed an increased responsibility on the medical profession in the performance of examinations for signs of cancer. The Cancer Commission, with the cooperation of the county medical society and the county branch of the American Cancer Society, and with the approval of the Council of the California Medical Association, has initiated a trial program in Riverside County of cancer detection examination in the private physician's office. The intent of the program is to make available a single clinical examination for accessible cancer, to publicize this examination, and to evaluate the results of such a program. The success of this campaign depends upon efficient cooperation of the physicians of the county, the local branch of the American Cancer Society, and the Cancer Commission. Sixty-five per cent of the members of the Riverside County Medical Society approved the plan. Indigents are to be examined in the physicians' offices or referred to the County Hospital for the examination. Final reports on the program in Riverside County are not available at the time of preparation of this report. Critical evaluation of the results will be necessary to determine the true worth of this plan.

10. The commission is seriously concerned about the increasing number of individuals and organizations claiming to possess cancer cures. A Cancer Commission statement on cancer cures and tests was published in CALIFORNIA MEDICINE in July 1951, and in the Bulletin of the Cancer Society. Copies have been sent to the various press services, and the statement has appeared in numerous newspapers throughout the state. Further and more positive action is needed to protect the people of California from the sad consequences of irresponsible and misguided practices of cancer quackery. Several of the more publicized of the so-called cancer cures are under critical scrutiny by the commission. Ways and means of combating these unscrupulous practices are being sought. A conference has been arranged with the State Department of Public Health in an effort to solve the problem. The commission solicits all possible information from the members of the California Medical Association concerning claimed cures for cancer.

The commission sincerely appreciates the cooperation and support of the President and the Council in their effort to represent the California Medical Association in the Cancer Control Program.

Respectfully submitted,

ROBERT A. SCARBOROUGH, *Chairman*

REPORT OF EDITORIAL BOARD CALIFORNIA MEDICINE

To the President and the House of Delegates:

A luncheon meeting of members of the Editorial Board was held in Los Angeles at the time of the 1951 Annual Session of the California Medical Association. The principal benefits—in addition to the opportunity it gave to members to know one another better—were that, through exchange of information and the airing of individual and mutual problems, the members and the board as a whole probably were made better able to serve the readers of CALIFORNIA MEDICINE and authors who submit material to be considered for publication.

No changes were made in the membership of the Editorial Board during the year. The members of the board are:

Chairman of the Board:
Dwight L. Wilbur, San Francisco

Executive Committee:
Albert J. Scholl, Los Angeles
H. J. Templeton, Oakland
Edgar Wayburn, San Francisco
Dwight L. Wilbur, San Francisco

Allergy:
Frank J. Crandall, Jr., Los Angeles
Samuel H. Hurwitz, San Francisco

Anesthesiology:
William B. Neff, San Francisco
Charles McCusky, Los Angeles

Dermatology and Syphilology:
Paul Foster, Los Angeles
H. J. Templeton, Oakland

Ear, Nose and Throat:
Lawrence K. Gundrum, Los Angeles
Lewis Morrison, San Francisco

Eye:
Frederick C. Cordes, San Francisco
A. R. Robbins, Los Angeles

General Medicine:
Maurice Sokolow, San Francisco
O. C. Railsback, Woodland
Edgar Wayburn, San Francisco
John Martin Askey, Los Angeles
W. E. Macpherson, Los Angeles

General Surgery:
Frederick L. Reichert, San Francisco
C. J. Baumgartner, Beverly Hills

Orthopedic Surgery:
Frederick C. Bost, San Francisco
Hugh Jones, Los Angeles

Thoracic Surgery:
John C. Jones, Los Angeles
H. Brodie Stephens, San Francisco

Industrial Medicine and Surgery:
Rutherford T. Johnstone, Los Angeles
John E. Kirkpatrick, San Francisco

Plastic Surgery:
George W. Pierce, San Francisco
William S. Kiskadden, Los Angeles

Obstetrics and Gynecology:
Daniel G. Morton, Los Angeles
Donald G. Tollefson, Los Angeles

Pediatrics:
E. Earl Moody, Los Angeles
William G. Deamer, San Francisco

Pathology and Bacteriology:
Alvin G. Foord, Pasadena
Alvin J. Cox, San Francisco

Psychiatry and Neurology:
Karl M. Bowman, San Francisco
John B. Doyle, Los Angeles

Radiology:
R. R. Newell, San Francisco
John W. Crossan, Los Angeles

Urology:
Lyle Craig, Pasadena
Albert J. Scholl, Los Angeles

Pharmacology:
Hamilton H. Anderson, San Francisco
Clinton H. Thienes, Los Angeles

Public Health:
George Uhl, Los Angeles
Charles E. Smith, San Francisco

Respectfully submitted,

DWIGHT L. WILBUR, *Chairman*

ADVISORY PLANNING COMMITTEE

To the President and the House of Delegates:

The Advisory Planning Committee has met the day preceding each meeting of the Association's Council in the past year and has discussed all items appearing on the Council's agenda as well as developing many details of the Association's current program of public relations. All items on which comment was to be made to the C.M.A. Council have been taken before that body and the Council's action on such matters has been printed as a part of the Council minutes.

During the past year the committee has been changed in its composition through the resignation of Mr. Kenneth Young as executive secretary of the San Diego County Medical Society and the appointment of his successor, Mr. William Nute. In Fresno County, Mr. Glenn Gillette, currently a member of the C.M.A. public relations staff, was succeeded by Mr. Roy Jensen, who is now a member of the committee. A third change, in Orange County, is pending at this writing, in the naming of a successor to Mr. William Tobitt, resigned as executive secretary.

Respectfully submitted,

JOHN HUNTON, *Chairman*

C.M.A. BLOOD BANK COMMISSION

To the President and the House of Delegates:

The last two links in the protective chain of our California "life line" of blood banks to serve the urban and rural population of the state have been forged. These two links are the regional Community Blood Banks in Bakersfield and Redding. The Houchin Community Blood Bank, a memorial to the Houchin family of Bakersfield, will be in operation by the end of February. It will serve the entire southern part of the San Joaquin Valley. The Shasta-Cascade Community Blood Bank is being built in Redding. It will care for the rapidly growing counties of the northeastern part of our state.

The inclusion of the above two blood banks makes a total of 12 non-profit Community Banks sponsored by the California Medical Association, implemented by the local County Medical Societies, and operated and controlled by doctors of medicine. Their sole purpose is to serve their community, their state and their nation. The strength of the system stems from free discussion, mutual assistance and respect for each bank's autonomy.

National Blood Program: Eight of our present ten blood banks (the Bakersfield and Redding banks are not quite in operation as this report is written) have contributed 188,070 units of blood to the National Blood Program—and this *at cost.* This contribution to the national cause was over and above the banks' regular civilian blood program.

Your Commission and the affiliated blood banks have scrupulously lived up to the full spirit of their contract with the American National Red Cross on the Armed Forces Blood Program. The blood banks and some of your medical societies have been confronted with needless evasions and impediments in dealing with the coordinating agency for this national program. The San Bernardino-Riverside Blood Bank and the Northern California Blood Bank have offered on several occasions to participate in the Armed Forces program and the two new banks entering the system also wish to help. The commission knows the services of our banks are needed for the all-out defense program and it intends to see that they are all enrolled.

We have insisted that our California Blood Bank system receive recognition at the national, state and local level for their role in the program. Within the state our banks should be represented with other agencies who are assisting, and we should receive joint publicity with the Red Cross. Your banks are performing superlatively in procuring, processing and distributing blood for the Armed Forces and for our civilians.

One heartening factor in the National Red Cross blood procurement work is the acceptance of federal money to compensate for the units of blood or blood plasma procured for the Armed Services. We sincerely hope that this same principle will be extended to the Red Cross civilian program, for then the major point of friction will have been removed.

Federal Civil Defense Administration: All of our system banks have pledged their full support and cooperation in aiding to create a plasma reserve for civil defense. Your chairman is a member of the State Civilian Defense Subcommittee on Blood and Blood Derivatives, and has aided in preparing a long-range plan for the state. Our banks are ready.

Unique Facility for Defense and Civilian Blood Program: On November 20, 1951, the Southern Pacific Railroad Company officially assigned SP car No. 136 to one of our member banks—the Irwin Memorial Blood Bank of the San Francisco Medical Society—for use as a traveling procurement station. The Irwin bank lends this facility to other banks within our system, for use in their areas, to procure blood for the Armed Forces and for the civilian program. The car has been altered to accommodate nine beds, canteen counter, and refrigerator. Thirty donors can be handled per hour. It will operate along Southern Pacific lines in California, Nevada, Oregon, Utah, Arizona, New Mexico and Texas, under the supervision of the blood banks and the Southern Pacific Railroad and Hospital department officials.

Financial Assistance: Non-interest bearing loans were made by the C.M.A. during the year to Bakersfield, Eureka, Riverside and San Bernardino. Repayment of former loans made to several blood banks is well under way. We anticipate that one bank, now being built, may require some moderate financial assistance. Your foresight in contributing financial assistance to medically sponsored blood banks has been a great factor in our "life line's" healthy growth. Money was never better utilized.

Meetings: The gravity of the international picture necessitated many meetings with national, state and local committees. These conferences required extensive traveling. Several invitations to appear before other State Medical Society meetings had to be refused but assistance, descriptive literature and suggestions were transmitted. Conferences were held in Minneapolis, New York, Washington and Chicago. Every blood bank within our system has been visited.

Exhibits: Our two new exhibits were shown almost constantly during the year. We exhibited at the following medical conventions: American Academy of General Practice, San Francisco, March 19-22; California Medical Association meeting, Los Angeles, May 13-16; Redding County Medical Society, September; American Association of Blood Banks meeting, Minneapolis, October 22-24; American Public Health Association, San Francisco, October 29 to November 2; California Academy of General Practice, San Diego, November 5-7; American College of Surgeons, San Francisco, November 5-9.

The great interest shown in our California system was reflected later by the deluge of requests for information. These requests have come from foreign lands and from states within our nation.

Research: We have always considered that a realistic research program should march side by side with our blood bank system's expansion.

Several of our banks pioneered and developed technical and administrative methods and many pieces of apparatus which over the last ten years have played a considerable role in making blood banking the successful enterprise it is today.

In 1952 we will embark on a more ambitious research program. Our plan calls for allocation and integration of certain phases of work which demand clarification. Research in basic issues is tremendous in its possibilities, and most provocative in its appeal.

In our blood bank program we are welded together by a common humanitarian principle. Of course our California Blood Bank System is not perfect. We are constantly learning. We are also willing and happy to transmit tested facts and methods to other out-of-state medical groups seeking assistance.

To the Executive Council, thanks. Your ready and continued support has brightened some very dark days.

To the Medical Directors of our widespread "life line" banks, grateful appreciation. Yours is the big task; you have given me unqualified assistance. You can be proud of your bank's achievements.

To the numerous technical and administrative workers and volunteers in our blood banks, a full measure of praise for the efficient, loyal manner in which you have carried on your humanitarian assignment. *You* are the Blood Bank System.

To our Commission members, my unlimited gratitude. I wish every member of our C.M.A. to know of your long hours of work, of your patient fight for medicine, but above all for the unstinting manner in which you have rendered *volunteer service.* To our volunteer administrative assistant, Mrs. Charles Hemphill, a "well done" salute.

Our report would be incomplete without our grateful acknowledgment to the hundreds of patriotic citizens, who, having faith in our "life line," have given freely of their time, their intelligence, their money and their blood to keep our non-profit system functioning smoothly and efficiently.

To John Hunton and his staff our apology for the many interruptions in their busy daily schedule. We have profited by their sage advice and been heartened by their enthusiasm.

To Hap Hassard for a thousand timely hints and for his ability to guide us through legal mine-fields and barb-wire entanglements.

It is difficult to terminate this report; there is so much which should be reported but space forbids.

Each member of our profession can and should share with us the pride of accomplishment in the following:

Blood for our Armed Forces: 189,005 units through December 1951.

Blood for *your* patients: 94,923 units for 1951.

Your Blood Bank Commission said that medicine could do the job—*it has.*

Respectfully submitted,

JOHN R. UPTON, *Chairman*

COMMITTEE ON INDUSTRIAL HEALTH

To the President and the House of Delegates:

The 1950 and 1951 annual reports of your Committee on Industrial Health anticipated a statement from the American Medical Association and other national associations of physicians and of nurses on the subject of nursing services in industry. This statement, which has been finally issued and approved by the House of Delegates of the American Medical Association, reads as follows:

ESSENTIALS OF MEDICAL NURSING SERVICES IN INDUSTRY

The status of the nurse in industry working without direct medical supervision presents an important interprofessional problem. The following statement has been prepared jointly by the American Association of Industrial Nurses, the Industrial Medical Association and the Council on Industrial Health of the American Medical Association to clarify legal and ethical principles, both for the members of interested professional organizations and for industrial employers providing any of the listed health services:

I. The value of physicians and nurses in industry depends on

(a) Training, experience and aptitude
(b) A position of authority in the industrial organization
(c) Good rapport with workers
(d) Good relations with their professional colleagues
(e) Thorough knowledge of work environment and processes
(f) Effective use of community health resources

II. A health service in industry should provide

(a) A safe and healthful work place
(b) Health counseling and health education
(c) Personal medical services as required for
  1. Observance of laws, codes and health regulations
  2. Emergency medical care
  3. Health conservation
  4. Job placement

III. Personal medical services involving the establishment of a diagnosis and the definition of treatment or the performance of specific preventive measures are functions of the physician. However, it is desirable for the nurse to participate in such services

(a) If she acts under medical supervision
(b) If she acts in an emergency

Standing orders are used to supplement rather than replace medical supervision. They are defined as a written compend of directions outlining routine medical or nursing services or procedures of an emergency nature approved and signed by a licensed physician and acknowledged by him to be services and procedures which may, in his absence, and until his arrival, be performed by a particular industrial nurse. Standing orders may constitute medical supervision if they are not an attempt to delegate the exercise of medical discretion but only delegate the execution of mechanical, clerical or administrative acts.

IV. In the absence of direct medical supervision and at the time of her employment, the industrial nurse should acquaint her employer with the legal and ethical scope of her services. If she is asked to perform services exceeding her training and licensure, she should seek advice from the nearest official medical or nursing agency.

V. In respect to industrial health services other than those listed as personal, the nurse can exercise considerable initiative. Practical limits must be based on her training, experience, and the availability of qualified consultants.

Your Committee on Industrial Health recommends that the Council consider endorsing this statement. We feel that such endorsement might lead to slightly improved relationships between the California Medical Association and the California State Nurses' Association and the industrial nurses' groups of the state.

Your committee does not feel confident, however, that the statement, as presently worded, will meet with the approval of the Council, which may wish to consider an alternative statement of possibly greater educational value to all concerned in the area of industrial medicine and nursing.

We therefore submit the following statement with the request that it be considered for endorsement, either in its present form or modified as the Council desires, for use in California and as preferable to the national statement quoted above:

NURSING SERVICES IN INDUSTRY: A STATEMENT OF PRINCIPLE

The California Medical Association recognizes the important contribution to industrial health by the members of the nursing profession through the individual activities of the nurses employed by and in industry. Through their contact with individual employees, and with members of managements, they have furthered public health education, the use of community resources, improved personal and plant hygiene, healthier psychological relationships between management and workers, and a closer liaison between the plant employee and the practicing physician.

It is also recognized, however, that demands are made upon nurses in industry by both employees and management to engage in activities which encroach upon the practice of medicine as defined by the Medical Practice Act and which, if acceded to, cause her services to replace, rather than supplement, the medical care by physicians which is demanded by the welfare of the patient, as well as being mandatory under the law.

It is urged that the nurse in industry, having met the emergency with which she is confronted, protect herself, her patient and her employer by referring the patient to a physician for diagnosis or medical care when either is required, and that further treatment be carried on only under such medical supervision. Employers of nurses are urged to facilitate such referrals and encourage them, in order that they, themselves, may be protected against being involved in violations of the Medical Practice Act.

Technicalities of the Medical Practice Act are difficult to translate into lay language and no simple definition can be given as to what services may be rendered with impunity. It certainly may be said, however, that any injury serious enough to cause temporary disability or which requires more than protective dressing, or does not respond favorably to procedures described in standard texts on first aid, will require medical treatment. It must be borne in mind that, regardless of the desires of the patient or his personal needs, or the demands of the employer in regard to industrial injuries, a nurse is forbidden by law to either diagnose or treat medical conditions or surgical injuries. It is only as this fact is grasped fully by employees and employers alike, that the pressure upon the nurse to exceed her area of function will be lessened.

Every nurse who is aware of the Medical Practice Act and its implications may become involved in a violation of an official interpretation. To ignore the act and its limitations is to invite inevitable violations.

The California Medical Association anticipates and welcomes the further extension of employment of nurses in industry in view of their tremendous contributions both to the over-all health welfare, and to the physical and emotional comfort of employed individuals. It looks forward to cooperating fully with the California Nurses' Association and the official industrial nursing groups in establishing and maintaining the area in which the professional industrial nurse may function effectively, efficiently, ethically and legally.

Respectfully submitted,

CHRISTOPHER LEGGO, *Chairman*

COMMITTEE ON RURAL MEDICAL SERVICE

To the President and the House of Delegates:

The activities of this committee were somewhat delayed due to the rather late appointment of the chairman.

The most pressing problem on the agenda of this committee's activities is an evaluation and correction of the health facilities for the migratory workers in the state. In connection therewith, a program for the approach to this problem is under way whereby health facilities for the seasonal and migrant worker may be determined. It is planned to make use of all agencies and organizations interested in this problem. Committee members throughout the state are being asked to evaluate their local problems and suggest means of correction. Use of the Governor's special committee's survey on migratory labor conducted in 1951 will be made. Official health agencies such as county health departments will be asked to assist in the work of this committee. There is little doubt that at the present writing there is need for considerable improvement in the health and medical services in this group of California's population. It is our sincere hope that the work of this committee will serve to correct much of the existing deficiency.

While the problem of the itinerant or migrant worker is essentially the most vital one for the present, there is also the ever present demand on the part of farm organizations for greater spread of medical care. Although this problem in its strict sense is not within the province of this committee, it would appear that some thought and consideration should be given it by cooperation, if not liaison, with other groups, particularly those committees of the C.M.A. charged specifically with this assignment.

The chairman has had the opportunity and privilege of sitting with the A.M.A. Committee on Rural Health and plans to attend the conference on Rural Health to be held in Denver the latter part of February.

Respectfully submitted,

H. A. RANDEL, *Chairman*

C.M.A-C.P.S. LIAISON COMMITTEE

To the President and the House of Delegates:

The committee acted favorably on the matter of C.P.S. providing a complete medical and hospital program for designated beneficiaries in the Sailors' Home of the Pacific. No other matters were referred to the committee.

Respectfully submitted,

H. GORDON MACLEAN, *Chairman*

C.P.S. STUDY COMMITTEE

To the President and the House of Delegates:

The entire committee of 15 has devoted many week-ends to an analysis of this very complex problem. A further report will be made at the annual meeting.

Respectfully submitted,

WILBUR BAILEY, *Chairman*

REPORT OF THE C.P.S. FEE SCHEDULE COMMITTEE

To the President and the House of Delegates:

The 1951 C.P.S. Fee Schedule Committee, appointed by the Council of the California Medical Association and known as the "Committee of Eight" was finally named in September, 1951. It was instructed to present in December, 1951, to the interim meeting of the House of Delegates, a fee schedule based not on the low income group fees as the present schedule is, but on the average fee for the average patient throughout the state of California, whether treated by specialist or general practitioner in rural or urban areas; a fee schedule to please all doctors under C.P.S.; and a schedule possible of ratification by their duly elected delegates to the House. This was a large order. The committee's work was simplified only by the directive that it was to deal with fees alone and not with policy such as the type of contract, question of indemnity, premium rates, etc., or what percentage of such a new higher fee schedule could be paid by present premium rates.

The "Committee of Eight" reviewed all the vast amount of work of the previous C.M.A. Fee Schedule Committees, and the fee schedules of all other state plans available; carefully considered all correspondence accumulated by past committees from various groups within California, and tabulated the fees of the present low income schedule

of September 1, 1949, as compared with the Frey Schedule presented to and rejected by the House in May, 1951. It then decided that to merely inject eight new personalities into the picture was useless and that the opinion of not just the delegates, but of the physicians practicing under C.P.S. should be sought. Therefore, a questionnaire showing the present low income groups fees and the printed Frey Schedule fees was sent to every physician member of C.P.S., with directions that if the physician wished to change any of the Frey fees he should list his suggested fees in the specified column, and if he did not know or care what a given fee should be, or was willing to work under the Frey schedule, he should leave the column blank. In this way a blank vote showed the willingness of the doctor to work under the Frey schedule. An I.B.M. card was then cut for every changed fee suggested by every physician, a matter of 79,460 cards. In order to get this done and tabulated by the December meeting, and knowing the ability of the busy doctor to postpone what does not have to be done at once, the committee set a tentative short deadline. The results were amazing. In the first five days more than 1,700 of the 11,000 questionnaires were returned and 2,780 were received in time for processing and study prior to the report; and slightly fewer than 700 came in later. In the questionnaire instructions, it was stated that if the physician was willing to work under the Frey schedule as printed he need not return the form at all. Hence it might be questionably assumed that the 7,000-odd physicians who did not return their forms approved the Frey schedule.

The committee carefully studied the I.B.M. tabulated returns of the questionnaires and found that if the returns were counted strictly as votes, the Frey schedule was accepted by a wide majority in every item, more than 2,100 physicians having voted for the approval of each. However, the committee recognized that a blank vote for a given item meant either approval or disinterest. Therefore it scrutinized the changes requested for each item and the trend up or down, collated the trend with the specific requests from groups, seasoned these changes with its own eight-man judgment, and arrived at a new fee schedule slightly differerent from the Frey schedule in some items. To show how this was done, a few samples are important. One of the greatest unit costs to C.P.S. is the office visit. This will vary from a "shot" visit or a simple dressing by a doctor or his nurse, to a prolonged interview or work-up. The item No. 011—"Follow-up Office Visit," was set in the Frey schedule at $5.00. In the survey, 2,359 doctors approved this by not voting for a change. However, 378 doctors considered it too high for the average case and felt it should be lowered on the average to $4.00. Thirty-six thought it should be raised. The suggested fees ranged from $5.50 to $15.00, and the mean was $6.00. Your committee studied the matter carefully and came up with three different categories of office visits and fees: $3.00 for the simple "shot or dressing visits," $4.00 for the routine visit, and $6.00 for the follow-up office interview, with the number of visits limited to one a week. Consideration of this kind was given to each item. Some were raised in spite of a clear "vote" for the Frey schedule because of a heavy "vote" to have it raised by the men doing the procedure, and others were slightly lowered for the same reason. For certain items, such as consultations, and appendectomy with various types of pathologic change, variable fees, as for the office visit, were arrived at by the committee. Other items show wide variability such as a cut tendon repair which was given no set fee and these were referred to the Medical Policy Committee. Many new items were added.

The committee realized that there could never be a perfect fee schedule, but its schedule which it considered to be close to the "will of the people" was presented to the interim session in December, 1951. This schedule was again turned down by the elected representatives of those people and referred back to the committee as "immature."

It is important to review the arguments used in referring this schedule back to the committee. The first came from a group of orthopedic specialists who spoke against the "total fee" for a given procedure on which the printed Frey schedule and the new fee schedule were based, stating that the long-winded ramifications of orthopedic cases made a "total fee" for a given case impracticable. Your committee had considered that carefully and endeavored to set the fee for the average case and made allowance for special cases by appealing to the Medical Policy Committee, realizing that a fee schedule must either be on a "total fee" basis for all surgical cases or none and that to set a fee for surgery only and then allow a follow-up visit for each postoperative call would greatly increase the paper work in the C.P.S. office and cut down the unit value to all doctors in turn. Perhaps the committee was wrong.

Another argument was that all the "votes" did not get counted in time and therefore the schedule was "immature." The 700-odd votes not tallied could not possibly have changed the figures. They are now being tabulated. The third argument was that inasmuch as the Trustees had just announced the 100 per cent pay on the old low fee schedule, the new schedule should not be accepted in spite of the previous directive of the House of Delegates to have a schedule prepared on the average fee rather than the low fees of the September 1, 1949, schedule. Is this logic? The fourth argument was that inasmuch as $40,000 was being appropriated to another Study Committee to investigate all the policies of C.P.S. in the future, a new schedule should not be adopted in the meantime.

So the "Committee of Eight" has the schedule back and at the present writing is contemplating its next move. Be assured its members have no axe to grind with any man or group. They are trying to perform a nearly impossible job of pleasing all the physician members of C.P.S. and their elected representatives at once with a "mature" fee schedule; and, as they suspected, they are still "behind the eight ball" and will probably remain there until the will of the House of Delegates crystallizes or they are relieved from duty by another committee.

Respectfully submitted,

Ralph D. Anderson
DeWitt K. Burnham
L. H. Fraser
Darrell Overpeck
Dudley Saeltzer
T. Philip Sampson
L. J. Tragerman
A. Justin Williams

ANNUAL COUNTY MEDICAL SOCIETY REPORTS

FIRST DISTRICT

San Diego County.

Francis E. West, San Diego, *Councilor.*

San Diego County Medical Society

The most outstanding event during the year was the Complete Service Bureau-San Diego County Medical Society lawsuit coming to trial. It will be recalled that on October 15, 1948, the Complete Service Bureau, a prepaid medical service corporation, filed suit against the San Diego County Medical Society. In its complaint the Service Bureau charged that three doctors on its staff were denied membership in the society without cause. C.S.B. and the three doctors asked damages of approximately $100,000. They also requested that the County Medical Society be permanently restrained from refusing membership to them and discriminating against them in other respects.

The medical society denied the allegations and in addition, filed a cross complaint charging the Complete Service Bureau with establishing an overlapping corporate set-up which created a situation whereby the staff doctors were advertising for patients and splitting fees in violation of state law.

The trial opened September 11, 1951, before a superior court judge in San Diego. C.S.B. dismissed its request to have its doctors admitted to the society and the case proceeded to trial on the medical society's cross complaint. After a ten-day trial, the case was submitted to the Judge on written briefs. Oral argument is to be had early in 1952, and a decision will be forthcoming shortly thereafter.

Mr. K. C. Young, executive secretary of our society for the past five years, tendered his resignation, effective Nov. 1, 1951, to accept a position with the Los Angeles County Medical Association as assistant executive secretary. He took with him the good wishes of all members of our society. Numerous applicants were interviewed for the vacated position, and William T. Nute, of San Francisco, was selected. Mr. Nute's broad experience in medical matters will serve him well in his new position.

Considerable time has been devoted to studying the reader interest of our bulletin. As a result of a survey made on this subject, the staff of the bulletin has made various changes in style, cover, topics for articles, etc., in order to conform with the wishes of members of the society.

The program committee has been most active in obtaining outstanding medical lecturers and professors from schools of medicine to appear as guest speakers at the monthly society meetings. The attendance at these meetings has steadily increased as a direct result of the interest shown in the speakers and their subjects.

The general practitioners in San Diego County were hosts in November to the California Academy of General Practice when the Academy held its annual meeting at Coronado. Many physicians in this area took advantage of the proximity of the Convention to attend one or more of the sessions.

The growth of the membership of the society has been tremendous during the past year. There are at present 66 applicants for membership serving their one-year probationary period. Their acceptance will result in a total membership of 585, making this society the fourth largest in the state.

W. H. Geistweit, Jr., *Secretary*

SECOND DISTRICT

Imperial, Inyo, Mono, Orange, Riverside and San Bernardino Counties.

John D. Ball, Santa Ana, *Councilor.**

Imperial County Medical Society

The problem of Civilian Defense received special emphasis during the past year by two full meetings of the county medical society being devoted to addresses on treatment of casualties of an atomic attack and the role of the hospital in civilian defense.

Along with the growth of the society there has been a gradual emergence of plans for development of a more comprehensive public relations program in the near future.

The society holds its regular meetings the second Tuesday of each month at 8 p.m. at the Pioneers Memorial Hospital. The scientific program is followed by a business meeting.

Ernest Brock, *Secretary*

Inyo-Mono County Medical Society

The year 1951 has been a very interesting year for the Inyo-Mono County Medical Society. We have had 12 meetings during the year and had guest speakers at nine meetings.

Several new members have joined. The attendance has been about 90 per cent of membership.

The interest in public health has been greatly improved. We feel that Inyo-Mono County Medical Society has had a very successful year in 1951.

J. Carl Cummings, *Secretary*

Orange County Medical Association

Perhaps the most significant development during 1951 in our society's over-all public relations program was the appearance of our first advertisement promising doctors' services regardless of inability to pay, announcing the existence of a board of appeal to which the public could turn when it felt it had been overcharged or otherwise unfairly treated, and reannouncing our service by which doctors were secured in emergencies by calling our headquarters number at any hour of the day or night.

We believe that these three services and functions of our association are definitely in the public interest and in advertising them we were announcing genuine accomplishments, not just making empty promises. We had set the foundation for them more than two years ago and we had that much clinical experience behind us.

The advertisement was a one-column by 18-inch display that appeared in every daily and weekly newspaper in the county in the week of October 8, 1951.

Significantly, at this writing, more than two months later, our central office had not received one report, as a result of the advertisement, of anyone being denied medical care for financial reasons or a complaint on fees. This was directly contrary to the pre-advertisement fears expressed by some members that there would be a "flood of complaints."

During the year our general meetings continued to draw excellent attendance, with our members being benefited by talks on such diversified subjects as the medical aspects of atomic warfare, cancer, diabetes, potassium metabolism, hematuria and tuberculosis in addition to presentations on legislative matters, California Physicians' Service and an appearance before us of the state president, Dr. H. Gordon MacLean.

Our county, despite its being somewhat removed from the "critical target area" category, is well organized medically in the event of disaster, either man-made or otherwise, with each community's medical personnel definitely assigned to posts and with a cooperative plan ready to roll should our neighboring Los Angeles County suffer a major catastrophe while we were remaining comparatively free from harm.

Our membership has continued a small but steady growth in step with the gradually increasing general population. At year's end our roster encompassed 210 active members, plus an additional 15 applicants due for processing early in 1952.

Chad M. Harwood, *Secretary*

Riverside County Medical Association

The annual doctors' and wives' banquet of the Riverside County Medical Association was held December 1 at the Victoria Country Club in Riverside. A golf tournament preceded the banquet.

The association meets the second Monday of each month at the Mission Inn in Riverside. A scientific program is presented after the business session, and light refreshments are served at the conclusion of the evening.

A bulletin of pertinent news and information for the members is published each month.

Richard N. Boylan, *Secretary*

San Bernardino County Medical Society

The most notable change made in our society during the past year has been the adoption of a new constitution and by-laws, which is a modernized version of our old one and conforms to the Constitution of the California Medical Association.

*Dr. Ball died Dec. 20, 1951.

It has been voted to set aside a certain amount of money each year for a building fund.

Our society continues to grow, and we have many activities which are handled by our secretary.

A majority of our members are now in the group policy for malpractice. In addition, we have a health and accident insurance which furnishes coverage to our members at a reduced rate.

Members are taking an active interest in our society, and our meetings are extremely well attended.

The blood bank has been one of our big achievements. The first six months show that 4,525 donors have been drawn and blood processed. This blood bank was set up as a community venture. The doctors of San Bernardino and Riverside counties donated almost $10,000 as a nucleus. This, with the help from the public and a loan from the California Medical Association, has insured a sound foundation. The blood bank is now making money and is able to repay some of this loan. Plasma will be available in the near future. Our blood bank proved that a locally sponsored bank is the best type.

CARL M. HADLEY, *Secretary-Treasurer*

THIRD AND FOURTH DISTRICTS

Los Angeles County.

H. Clifford Loos, Los Angeles, *Councilor,* Third District; J. Philip Sampson, Santa Monica, *Councilor,* Fourth District.

Los Angeles County Medical Association

One of the most active years in history has just come to a close for the Los Angeles County Medical Association. With its membership at an all-time high of 5,102, the association has made an all-out effort to furnish a strong and effective guiding hand for the local members of organized medicine.

The highlight of the past year—from the standpoint of effective organization and execution of a complex problem—was the association's hosting of the American Medical Association's Clinical Session from December 4 through 7. Visiting physicians from all over the nation were unanimous in the opinion that the interim session was one of the finest on record, with scientific exhibits and lectures all keyed to the broadening of the general practitioner, as well as the specialist.

Another individual accomplishment of the association during the past year was the approval and establishment of a grass-roots public relations program, with three primary goals: (1) improvement of the doctor-patient relationship, (2) bolstering medical prestige throughout the community, and (3) bringing the association's far-flung branches into closer contact with the parent organization. In cooperation with the state's expanded public relations activities, it is hoped that this program will go into high gear during 1952.

The association's civil defense committee continued to lead the way for other comparable groups throughout Los Angeles County. Under the leadership of Dr. Frank Schade, the committee has set up a blueprint against disaster in the event that all-out war should ever hit this area and has become one of the most active committees of its kind in the nation.

In the same field of community betterment, the association's smog committee—guided by Dr. Francis M. Pottenger, Jr.—has continued to probe the causes and cures of the contaminated air which has come to plague this area during the past year. Although progress is necessarily slow in such a complicated problem, this group looks forward to recognition and assistance in its admirable efforts during the coming year.

Due to the skyrocketing of costs connected with any new building operations, the association has temporarily abandoned original plans of constructing an entirely new building for its offices and library. Instead, as an economic measure, it is likely that the existing structures will be enlarged and rearranged to the extent that thousands of dollars can be saved, yet—at the same time—still accommodating the association's greatly-expanded operations for several years to come.

For the first time, the revised constitution and by-laws were brought into effect in the association's recent elections for general officers, trustees, and councilmen. Under the new setup, the trend of bringing the 13 outlying districts into closer contact with the metropolitan area was greatly assisted by adding new and fuller representation to the council. In the same direction, there has been established a monthly conference of branch officers, which serves to keep the outlying areas in contact with what their central organization is attempting to do in their behalf.

PAUL D. FOSTER, *Secretary-Treasurer*

FIFTH DISTRICT

San Luis Obispo, Santa Barbara and Ventura Counties.

A. A. Morrison, Ventura, *Councilor.*

San Luis Obispo County Medical Society

The following information is a synopsis of the activities of our society for 1951:

The San Luis Obispo County Medical Society held ten meetings during the year 1951, two were social, one was a postgraduate meeting and seven were a combination of scientific and business meetings. Meetings were well attended and the scientific discussions by guest speakers were received with enthusiasm.

The San Luis Obispo County Medical Society has continued to be an active backer of the Tri-County Blood Bank.

The society has established a grievance committee and a public relations committee.

Nine applicants were elected to membership in the society during the year. Total active membership now is 47, and our society will have two delegates at the C.M.A. convention.

The medical personnel of Camp Roberts have been invited to attend our medical society meetings. They have reciprocated by being host to our society on two occasions.

JOHN H. WOODBRIDGE, *Secretary-Treasurer*

Santa Barbara County Medical Society

The society at present numbers 155 members and has completed a very successful year under the presidency of Dr. H. Verrill Findlay. During the year 19 new members were elected to the society. Seven members transferred to other cities.

During the year the officers of the society have been kept busy with various projects. The rewriting of the constitution was undertaken under the guidance of Dr. Laurence M. Heiges. An excellent program was furnished by the postgraduate committee, and the lectures were well attended. The 12-week course which the University of Southern California School of Medicine offered was also a great success. During the year we have had many outstanding speakers for the scientific portion of our meetings which have been of educational benefit to our group.

We are now looking forward to a busy and interesting year under the guidance of our new president, G. Horace Coshow, and president-elect, W. C. Graham. Our officers elected at the December meeting were: President, G. Horace Coshow; president-elect, Walter C. Graham; secretary, Lawrence M. Nelson; secretary-elect, Arthur E. Wentz; treasurer, Francis B. Zener.

LAWRENCE M. NELSON, *Secretary*

Ventura County Medical Society

The Ventura County Medical Society held 12 meetings during 1951. Meetings are held on the second Tuesday of each month at the Colonial House in Oxnard with the exception of the Annual Meeting in December which is held at the Ojai Valley Inn.

On October 9 we were honored by a visit from Dr. H. Gordon MacLean, president of C.M.A., who discussed public relations.

The Public Relations Committee, with C. A. Smolt, M.D., as chairman, has been very active. A grievance committee has been formed and will function in 1952. A conference was held with the editors of all the newspapers of the county and the directors of the radio stations, with the purpose of improving press relationships and cooperation, and a "minimum code of cooperation" was adopted. The society passed a resolution opening all meetings of the society to accredited members of the press.

Foster Memorial Hospital in Ventura has completed its 20-bed maternity wing addition and St. John's Hospital in Oxnard is completing its 75-bed addition. The Ventura County Hospital has started excavation for a 75-bed addition and new surgical, x-ray, laboratory and out-patient clinic facilities.

The following officers were elected to serve for the year 1952: President, J. R. Monahan, Oxnard; president-elect, J. M. Hunter, Ventura; secretary, F. K. Helbling, Ventura; and treasurer, R. E. Williams, Camarillo.

FRANKLIN K. HELBLING, *Secretary*

SIXTH DISTRICT

Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tulare and Tuolumne Counties.

Neil J. Dau, Fresno, *Councilor.*

Fresno County Medical Society

The society's program of committee organization, coordination of projects and emphasis on internal relations as well as public relations has continued to be our basic objectives in 1951. Early in the year an immunization program, with the full cooperation of society members, was put into operation. All phases of doctors' and hospitals' participation in the Fresno civil defense program were completed and details worked out for the coordination of medical facilities in the event of a major disaster. Close cooperation has been maintained with the Valley Blood Bank and the Red Cross in the national defense blood program.

A local chapter of the American Heart Association was organized. Pursuant to recommendations made by the 1950 library committee, the medical library of the society merged with that of the General Hospital and is now in operation. The number of members covered under the society's group malpractice program was almost doubled in 1951 and monthly disability benefits were increased under the society's group health and accident program. A medical advisory committee was appointed to assist in the administration of the Valley Children's Hospital currently under construction in Fresno. This committee will form the nucleus of the medical staff during the construction period and thereafter.

Every effort has been made to schedule monthly scientific programs that would be of interest and value to general practitioner and specialist alike. A different field of medicine has been discussed at each meeting and attendance at these meetings has been good.

The speakers' bureau continued active with increasing numbers of talks given by society members on medical and medico-economic subjects throughout the valley. Newspaper coverage of society activities and its members has been good. The society's office has continued to aid the public in securing doctors in emergencies, arranging for referral of patients to doctors, disseminating data concerning health insurance, medical schools, hospitals, medical society policy, public health matters and various other public services. Several safety campaigns have been endorsed and sponsored by the society. Particular attention has been paid to legislation in Sacramento and Washington affecting the public health and welfare and direct representation made to our legislators.

The second annual San Joaquin Valley Medical and Surgical Institute, cosponsored by the C.M.A., was held in October. A record-breaking attendance attested to the success of the institute. The Fresno Chapter of the American Academy of General Practice has functioned primarily to further scientific instruction, the emphasis having been switched from entertainment to teaching, both by medical school instructors and local specialists.

The committee on professional relations has continued to serve as a judicial body in indicating to the profession and the public various standards of medical practice and procedures in the community regarding ethics, fees, etc. The committee has investigated and upon request, arbitrated any matters of dispute, controversy or grievance arising between members, or between patient and doctor, and has advised in cooperation with all those concerned. A serious and conscientious effort has been made to protect the interests of the public, but at the same time, no arbitrary rulings or undue pressure has been exerted which would adversely affect the physicians' individual rights. Functions of the committee have been judiciously publicized and both members of the medical profession and the public alike are becoming more cognizant of the society's efforts to arbitrate complaints in a just, unbiased manner.

The Woman's Auxiliary continued active in many fields of aid to the profession and service to the public. Recruitment of student nurses, ID tags for children, national blood defense program, aid to nurses at the county hospital—these were some of the Auxiliary's constructive activities.

The society has continued in its study of a solution to the health problems on the west side of the San Joaquin Valley. Early in the spring a meeting was held with various other agencies for the purpose of acquainting the Field Director of the A.M.A.'s Committee on Rural Health with the west side migrant situation as it relates to medical care and public health. The society has worked in close cooperation with the Public Health Department and the Fresno County Coordinating Council in an effort to improve the health conditions of the labor camps in this area and has studied and endorsed the policies and procedures for the operation of rural health clinics. In other matters pertaining to public health, the society approved the fluoridation of community water in Fresno and Madera counties; recommended the support and the development of a course for practical nurses at the County Hospital and the Fresno Junior College; made a survey of rest homes in the community and pledged its aid in combating the narcotics racket. There has been an effective liaison between the medical profession and organized groups interested in cancer, heart disease, tuberculosis, infantile paralysis, crippled children, etc.

Active membership increased from 217 to 230; total membership from 243 to 259. Several members entered the military service.

DEAN L. HYDE, *Secretary-Treasurer*

Kern County Medical Society

The doctors of Kern County, through their organization, the Kern County Medical Society, have during the year 1952 worked hard through various means to demonstrate to the people of the communities of the county the good will that the doctor has toward his patient and toward his community.

One of the major achievements of the year has been the establishment of the Houchin Community Blood Bank, which will serve all of Kern County. Through the efforts of the Board of Directors of the non-profit corporation consisting of Drs. Hall, Osell, Varney and Vaughan, and lay members of the community, the bank has become a reality and will be in operation by the end of the first quarter of 1952. The construction of the building has been made possible through the generosity of a citizen of Kern County, Mr. Elmer Houchin, who contributed funds for its construction.

The society again participated in the Kern County Fair through the Hall of Health that it originated. By distribution of pamphlets and talking with patrons who passed through the Hall of Health, an effort was made to create good will for the medical profession. Pamphlets and discussions were directed toward informing the public of the activities and services of the doctors of the county, explaining the doctors' stand on socialized medicine and the part that the doctors are playing in providing leadership and advice in the development of community improvement projects. The Hall of Health and the medical society exhibit were awarded a blue ribbon by the judges of the county fair for the high quality of the demonstration.

The Hospital Committee of the society followed through with the necessary preliminary steps to bring about the construction of a new 100-bed hospital to serve the Bakersfield area. Following up the hospital survey report, a Founders' Committee was organized, a board of directors selected, and the Greater Bakersfield Memorial Hospital Association incorporated. Application was made for grant-in-aid under the Hill-Burton Act. The medical society committee and the board of directors of the hospital association are still working cooperatively with the hope of consummating this plan in 1952.

In cooperation with the American Cancer Society and the Cancer Commission of the California Medical Association, the cancer committee provided the doctors of the county with a one-day cancer symposium.

Through their monthly meetings, the doctors were given an opportunity to hear outstanding teachers in the field of medicine, as the program committee provided each meeting with a speaker on medical subjects.

The grievance committee, established for the purpose of hearing complaints of the public in an effort to establish better relationship betwen doctors and patients where misunderstandings might exist, went into action, hearing and adjudicating six cases.

The relationship between the doctors of Kern County and the Kern County Hospital has gone smoothly. The doctors are providing the hospital with a visiting staff and a consulting staff to the extent of more than 8,000 medical care hours. It is estimated that this service has saved the county taxpayers approximately $250,000. It is hoped that soon, with good will firmly established, the liberal admittance policy of the county hospital may be corrected. This depends greatly, however, upon whether or not more voluntary private hospital beds are made available in the community of Bakersfield.

Medical Economics Council of the Kern County Medical Society, through increased activities and increased revenues, has effected a reduction of $25 in the dues for 1952. The collection activities, through forced contacts with dissatisfied patients, have, without question, been instrumental in promoting good public relations that might be lost through lack of contact.

The doctors of Kern County cooperated with the California Physicians' Service during the period of separation from Blue Cross during the past year, giving C.P.S. needed approval through signing a letter which was used in contacting organizations insured jointly by C.P.S.-Blue Cross. It is believed that this letter was of help in convincing businesses to continue with C.P.S. coverage.

Through the efforts of the doctors as individuals during election times, the society now enjoys the comfortable situation of having friends in local, state, and national offices. This increasingly important factor points with some assurance to improved conditions and public relations for the doctors of Kern County for the ensuing year.

ROBERT W. SHELDON, *Secretary*

Kings County Medical Society

The annual meeting of the Kings County Medical Society was held December 20, 1951, at Peden's Cafe in Hanford.

The society meets on the third Thursday evening of each month at various places throughout Kings County. Dinner is served, followed by a short business session and a scientific program.

WILLARD S. BRIDWELL, *Secretary-Treasurer*

Merced County Medical Society

During 1951 the society adopted and placed in use a new constitution and by-laws, replacing the out-dated procedure which had been in force before.

No new members were admitted to the society during the year and three men were dropped, two by transfer and one by death.

The following officers were elected for the year 1952: President, J. J. Wolohan, Livingston; president-elect, E. M. Soderstrom, Merced; secretary-treasurer, Harry R. Maytum, Merced; board of governors, C. C. Fitz-Gibbon, Merced; E. H. Koepke, Merced; W. E. Fountain, Merced; G. Pimentel, Los Banos; A. E. Jackson, Merced; John East, Dos Palos; delegates: E. A. Jackson and G. Pimentel, Los Banos; Alternates: Shelby Hicks, Merced; and Hugh Haas, Dos Palos.

Regular meetings are held the fourth Thursday of each month at the Hotel Tioga in Merced at 7:15 p.m. and visiting M.D.'s are always welcome.

HARRY R. MAYTUM, *Secretary-Treasurer*

San Joaquin County Medical Society

Dr. D. C. Harrington served as president of the society in 1951. Activities of the society during the year included:

1. A continued effort was made to launch an executive secretary program in the county. On a vote the plan was defeated by a very small margin. However, later in the year the society authorized the board of directors to secure an office for the society and to engage a full time paid assistant to the secretary.
2. The draft in final form of a new constitution and by-laws for the society was passed. This has entailed a great deal of work by the committee headed by Dr. Virgil Gianelli.
3. From September to November the postgraduate study club presented its annual series of eight lectures on scientific subjects of general medical interest. Dr. Louis P. Armanino was in charge of arrangements.
4. There has been cooperation by our members with American Cancer Society. About one hundred addresses have been given to lay groups during the year.
5. Dr. D. C. Harrington, our representative to the Red Cross Blood Bank, reports the bank has had its biggest year. Two bloodmobiles and a special blood train are in service and in one month, in excess of six thousand pints of blood were drawn.

During the year two of our pioneer members died: Dr. Jesse W. Barnes, who practiced in Stockton from 1919 to 1943, and Dr. Homer D. Rose, who practiced in Sonora from 1915 to 1943. Four of our members, Drs. Allred, Hopkins, Low and Hannah were called to military service. Dr. Oliver P. Riggle has been unable to practice during the past year because of illness.

There has been a net gain in membership of 12 during the year 1951, making a total membership at this time of 161.

FRANK A. MCGUIRE, *Secretary*

Tulare County Medical Society

The Tulare County Medical Society, composed of 79 members, had a most successful year with a considerable number of new activities in the year 1951 under the leadership of President James E. Feldmayer of Exeter. Regular monthly meetings were held as usual in the county, and another successful ladies' night was held at the Martin Memorial Building in Springville.

During the year, the new constitution and by-laws were approved, making the business transactions much more streamlined since the newly-formed board of governors were able to transact most of the routine business matters without taking time from our regular monthly scientific meetings.

During the year Dr. Gerald Casebolt entered the armed forces, Dr. Charles M. McClure remained in the service, and Dr. William D. Clinite, who had served several years in the U. S. Naval Reserve, completed a second tour of duty and returned to private practice in Tulare.

During the year an emergency arose at the Tulare County Hospital when the entire medical staff suddenly resigned, making it necessary for the Tulare County Medical Society to furnish a temporary emergency staff under the leadership of Dr. Elmo Zumwalt of Tulare. A complete reorganization of the medical staff at the Tulare County Hospital was accomplished, and more than 50 per cent of the members of the Tulare County Society are now cooperating as visiting staff members to the county hospital, making the medical program considerably more interesting to the resident staff, and also improving the quality of medical care in the county hospital considerably.

Another new activity was the introduction of a monthly study group which meets at the new Tulare District Hospital for discussion of medical subjects and clinical pathological conferences. Also, the postgraduate activities committee was active during the year, and was successful in bringing to Visalia and Tulare County a postgraduate seminar which met Sunday, October 14, 1951. Attendance at this meeting was very gratifying and the program was excellent. Also, a seminar on cancer was held at our regular monthly meeting September 27, 1951, at which time Drs. John Budd, Moris Horwitz and Lewis Guiss presented a symposium on cancer in accessible sites. During the year a liaison committee from the Tulare County Medical Society was active in working with the sheriff-coroner's office of Tulare County in an attempt to improve relationships between the physicians and the coroner's office and to establish a medical examiner type of program in Tulare County. It is hoped that this program will be worked out during the coming year.

Officers elected at our regular December meeting on December 20, 1951, are: J. H. Brady, president; Vincent M. Dungan, vice-president; Robert D. Karstaedt, secretary; and Victor A. Badertscher, member of Board of Censors.

J. H. BRADY, *Secretary*

SEVENTH DISTRICT

Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties.

Hartzell H. Ray, San Mateo, *Councilor.*

Monterey County Medical Society

Nineteen fifty-one was a very busy year for the Monterey County Medical Society. Six new members were accepted into the active membership, one member retired, three moved away. The total membership is now 118.

This year marked the first year of operation under the new constitution. The society became incorporated under the laws of California.

A group health and accident policy was instituted and widely accepted.

The Society took an active part in the formation of the rules and regulations which would instrument the formation of a staff of the new Salinas Valley Memorial Hospital, which will begin operation in late 1952. The medical society through its executive council is taking a more active part in community affairs in problems affecting health and welfare.

Many new doctors have moved into the county and during 1952 the membership will pass the 120-125 mark.

The new officers for the year will be Ray V. Rukke, president; H. M. Stufflebam, president-elect; Frank P. Cusenza, secretary; and John R. Marron, treasurer.

HOWARD C. MILES, *Secretary*

San Benito County Medical Society

On Thursday evening, October 18, 1951, a banquet was held at the Holland Hotel in Hollister for the doctors and their wives. Guest speaker of the evening was Dr. L. A. Alesen, President-elect of the C.M.A. Other guests were Dr. Hartzell Ray, Councilor from San Mateo, and Messrs. Ed. Clancy and G. W. Gillette from Public Relations of the C.M.A.

Cocktails were served at the home of Dr. R. Hull, County Health Officer, prior to the banquet. The evening was greatly enjoyed by all and it is hoped to make such an event an annual affair.

The county society holds regular monthly meetings on the third Thursday of each month.

R. E. BROWN, *Secretary*

Santa Clara County Medical Society

The year 1951 witnessed greater activity on the part of the Santa Clara County Medical Society and its officers than occurred in any previous year. Many basic policies formulated in the three previous years, in particular, were furthered by action of the Council and the various committees. During the year there were 13 Council meetings (of approximately five and a half hours' duration each), and 66 committee meetings, with a total member attendance of 554.

During the year, 30 applicants were elected to regular membership, seven to associate membership, and five to affiliate membership. Regular memberships as of November 1 totaled 346, with 29 applications still pending. In compliance with Council request, the firm of Logan and Frazer was engaged to provide a monthly auditing service, and to revise the accounting system to provide more uniform reporting on the society and bureau business as suggested by the executive secretary. This was deemed advisable in view of the fact that currently the two organizations' combined financial transactions during the year exceed $200,000.

The scientific meetings arranged by the program committee were especially well attended and received each month. The choice of subjects and speakers made by the committee has earned numerous compliments. The June golf party was a success, and over 300 persons attended the president's dinner on December 10. This annual dinner marked the 75th anniversary of the founding of the Santa Clara County Society.

The Committee on Hospitals and Related Groups again concerned itself with the problems of standardizing procedures in the various local hospitals, and during the year the executive committee held informal talks with hospital staff leaders in an effort to develop closer liaison between the programs of the various hospitals and the medical society.

In the early part of the year the Code of Cooperation for use between the society and local voluntary health agencies as proposed by the public health committee was adopted by the society. The Council also approved the committee's recommendation to assist and work with the State Department of Public Health in conducting a morbidity study among residents of San Jose. The society sent three official representatives to Sacramento in October to attend the Governor's Conference on "Problems of the Aging." Attention was given to the problems of helping to develop a new administrative code for the County Health Department and County Hospital as required by the terms of the new county charter. The Council assisted the County Board of Supervisors in the selection of four physicians to serve on the newly established Health and Welfare Commission of the county.

As it has for the past three years, the Council took an active and progressive interest in the affairs of the San Jose-Santa Clara County Emergency Aid Station in San Jose. Attempts to destroy the present system of a publicly administered emergency aid service by leasing it to private hospitals was successfully combated by the Council. The society's committee on the emergency aid station continued its effort to improve the services provided, and has earnestly sought to secure a more favorable location for the station.

The work of the Civilian Defense Committee was chiefly one of unifying the various interests and in coordinating the various complex responsibilities. The committee published a booklet listing all civilian defense aid and mobile stations and made the booklet available to all members of the medical personnel division of the county's civilian defense administration. The committee assisted in establishing training courses for nurses and instructors in civilian defense activities. It considered and established policy on matters of blood typing and immunization.

The Military Liaison Committee busied itself all year with various individual and personal situations brought about through the medical personnel draft registrations of both October 1950 and January 1951. The statistical work of compiling current reports on every draft registrant physician in the county was, of itself alone, a tremendous task.

The public relations committee again ably carried out its assignment of publicizing medical society policy regarding the availability of medical care for persons unable to pay for it, and published four special advertisements on the subject of "Plus Values of Voluntary Health Insurance." These advertisements appeared in San Jose, Sunnyvale, Mountain View and Palo Alto papers, and in the weekly A. F. of L. *Union Gazette*. During the early portion of the year members of the committee worked closely with representatives of the California Medical Association in matters before the State Legislature in Sacramento. The committee maintained an exhibit at the county fair which publicized voluntary health insurance, and more than 3,000 persons were given tickets for a free chance on a one-year paid-up policy with Blue Cross.

One of the major subcommittees under the standing Committee on Medical Economics was that of the Malpractice Claims Prevention Committee. This group probably met more often than any other, except the executive committee, and its members made themselves available for assistance to more than 30 physicians throughout the year. There was an increase in the number of suits filed against physicians in the county, but at the same time it was noticed that there was a marked increase in the number of physicians who have become claims prevention conscious, and have used the committee's advice and services to their personal advantage in reducing the possibilities of litigation. The committee, in cooperation with leaders of seven other Northern California counties, successfully completed negotiations with the American Mutual Liability Insurance Company of Boston for a five-year extension of the present group contract, on terms which guaranteed that premiums during that period would not rise more than 25 per cent above the 1951 level.

In June, the Medical Economics Committee completed an agreement with National Casualty Insurance Company, whereby the monthly indemnity income for sickness or accident was raised from $225 to $300 per month, with a corresponding premium increase. This action was taken to help offset the income value of $225 lost through inflation. The subcommittee on prepaid plans gathered and distributed information of value in answering inquiries coming to the society on the availability of the various plans. One of the most intensive jobs of the year was done by the committee on the society's "C.P.S. Deductible Contract Plan." Although final action has not yet been taken by the membership, the committee has made an intensive study of possible means to provide a pilot program in cooperation with California Physicians' Service to determine if such a program, as envisioned by the committee, is practical to sell, service, and administer. Santa Clara County alone would be used for the experiment. The November membership meeting was devoted entirely to a discussion of the possibilities of such a contract. The committee members have worked long and hard throughout the year, not only among themselves and with representatives of all the specialty groups, but also with the Trustees of C.P.S.

The Committee on Ethical Conduct preferred charges on one member during the year, such charges being heard by the Council. The hearings were concluded prior to the Council's going out of office on December 10. The decision of the Council had not been released as of the time this report is prepared.

The executive committee and the Woman's Auxiliary advisory committee worked very closely in unifying the interests and programs of the two organizations during the year. The Council congratulates the Auxiliary for their splendid efforts in developing a program of gifts, and their assistance as "adopted parents" for youngsters at the County Hospital. Through closer correlation of the Auxiliary's and society's activities, even more material gains are anticipated during the coming months.

As the year drew to a close, the Building Project Committee of the society neared completion of its report on the possibilities of the society providing and financing a building which would house the various society's activities and Bureau of Medical Economics. The committee intends to recommend distribution of its report, when it is completed, to the entire membership.

Attendance of the county's delegates and alternates at the Annual Session of the C.M.A. in Los Angeles in May was again 100 per cent. At the newly inaugurated mid-year Interim Session (December 1 and 2), ten out of the 14 delegates and alternates were present. The hard work of this group during these sessions, and the praise which the delegates have received for their leadership in state association affairs deserves commendation from the entire membership.

The Council is especially appreciative of the constant help given by the San Jose *Mercury*, the San Jose *News* and the Palo Alto *Times*, in publicizing the activities of the society. The editors of all three papers have, on one or more occasions throughout the year, written special editorials directly praising both the work of the society and the current policies of the American Medical Association. The news columns of these papers have helped make more widely known the constant availability of services to the public from the medical society's business office and public service committees. The increasing dependence by the public upon the society is shown by the variety of requests which it has received during the year for assistance or services in many lines directly or closely associated with medical care services. The variety of requests increases with each passing year, and is as varied as the nominations to the Board of Supervisors for appointees to the welfare board, on down to the urgent one hour's notice to locate a "team-physician" to serve at a crucial high school football game, which could not have been played without a physician present.

During the year the society was able to "return" some of the help it had received in previous years from other county societies by loaning personnel to other areas seeking to start programs patterned after the Santa Clara County plan. Nearest to home was the assistance given to Monterey County. In the spring of the year the society's executive secretary was loaned to the Phoenix, Ariz., society for a ten-day period. Since that time, Phoenix has set up a program completely identical to that of Santa Clara County, to and including its own Bureau of Medical Economics. In December the American Medical Association selected the Santa Clara County's "guaranteed care for all" plan as one of the six major topics for discussion for its fourth annual Public Relations Conference held during the A.M.A.'s Interim Session in Los Angeles. The constant and frequent recognition of this society's activities by so many independent observers might well be considered a compliment for the programs which the officers and leaders of the society have instigated and kept in active force during these recent years.

WILLIAM L. MOLINEUX, *Secretary*

Santa Cruz County Medical Society

Dr. J. C. Jacobson of Santa Cruz served as our president during 1951 and a very successful year was recorded. As in the past the system of bimonthly meetings was continued. Meetings are held at Deer Park Tavern, Aptos, which is centrally located for members coming from both ends of Santa Cruz County. At the January meeting Dr. T. P. Lyon of San Jose presented the subject "Lipoproteins and Atherosclerosis." Dr. Albert Snell of Palo Alto was with us in March and spoke on "Cirrhosis of the Liver." The May meeting was a tri-county meeting with San Benito and Monterey counties and the speaker was Dr. Louis J. Regan who spoke on "Some Aspects of the Malpractice Program." In July Dr. H. Glenn Bell of the University of California presented a paper on "Cancer of the Breast." Dr. Charles Bechtol of Oakland was with us in September and spoke on "Painful Shoulders." The November meeting was the annual business meeting and, in addition, a film on ACTH was shown through the courtesy of Armour and Company. Dr. J. Ludden of Watsonville was elected to serve as president in 1952.

SAMUEL B. RANDALL, *Secretary*

San Mateo County Medical Society

During the year 1951 the San Mateo County Medical Society continued to grow in membership, reaching a new total of 307 active, associate and other types of members. The program committee produced a number of outstanding meetings during the year on both scientific and economic subjects which were climaxed by the annual meeting in December. Dr. Dan W. Boudett succeeded to the presidency with Dr. Alf T. Haerem being elected to president-elect and Dr. Bradley C. Brownson as secretary-treasurer. Continued growth at our present rate will make the society eligible for another delegate to the C.M.A. by November. The society's public relations program is moving along in full swing and has received very satisfying recognition by the general public.

ALF T. HAEREM, *Secretary*

EIGHTH DISTRICT

San Francisco County.

M. Laurence Montgomery, *Councilor.*

San Francisco Medical Society

The membership of the San Francisco Medical Society reached an all-time high in 1951. One hundred forty-eight new members were admitted between December 1, 1950, and December 1, 1951, bringing the total membership figure to 1,686. Twenty-one members died during the period, and leaves of absence were granted for postgraduate study, illness and military service to 41 others.

The new constitution and by-laws which went into effect January 1, 1951, created the offices of president-elect and assistant secretary-treasurer, the latter to become editor of *The Bulletin* of the S.F.M.S. as well. To fill these posts, the board of directors set March 12 as the date for a special election. Stacy R. Mettier, an internist, professor of medicine at the University of California Medical School and head of postgraduate instruction at the University of California Medical Extension, was selected as president-elect. He assumed the presidency on January 1, 1952. Herbert C. Moffitt, Jr., was elected assistant secretary-treasurer.

The administrative affairs as well as the many activities of the society expanded to such extent in 1951 that it very often was necessary for the board of directors to meet twice a month instead of once. In addition, the executive committee, between board meetings, held regular luncheon meetings to which were invited committee chairmen from time to time to discuss pertinent subjects carried on the agenda for the board of directors.

The principle of having a large percentage of the membership working on committees of the society was continued in 1951. It has been found that this "spread-the-work" policy increases active interest and participation in society affairs and seasons committee members for future posts.

Television, which is becoming so much a part of the American scene and way of living, posed a problem for the society in 1951. Requests for appearances on television programs became so numerous that it was necessary for the president and board of directors to create a committee on television. To determine feelings concerning the appearance of physicians on television programs, the committee sent a questionnaire to officials of the C.M.A., the society and to members of the faculties of the two medical schools. The general consensus seemed to be that the present rules of the society, with reference to the appearance of physicians before lay audiences were applicable to television appearances.

The society's tuberculosis minifilm unit completed its third year of function in 1951 with a total of films read during that period of 17,325, of which 16,688 read negative. Other findings included 49 active T.B., 154 inactive T.B., 180 clinically other disease, and 184 clinically negative.

The Irwin Memorial Blood Bank of the society serves the transfusion needs of the civilian and the majority of military hospitals in San Francisco, Marin, Napa and Solano counties. These hospitals are routinely stocked by the society's bank with blood of various types and with irradiated plasma. Through the clearing house of the California Blood Bank System, the bank further aids the transfusion needs of the people by maintaining reciprocity with the nine other member banks of the system, 11 out-of-state banks, and the eight Red Cross Regional Blood Centers of the Pacific Area.

Since September 1950, through October 1951, the society's blood bank has furnished 55,325 units to the Armed Forces Blood Donor Program, over and above the bank's services to its communities. This record rates third for

the country and is surpassed only by New York and Los Angeles which have much larger populations. The bank has been able to stockpile and store in subdepots, primarily hospitals in San Francisco and North Bay counties, over 1,000 units of dried plasma and sufficient blood bank equipment to procure blood from over 2,000 donors for civilian defense purposes.

Efforts continued during the year to improve *The Bulletin* of the society, and to encourage artist-members to contribute to it. Five out of 12 covers used in 1951 were reproductions of photographs or paintings by physicians. A new column entitled "The Drug Review" which outlines the therapeutic usage and dangers of the newer drugs, was introduced during the year.

In the spring, a testimonial dinner was given to John W. Cline, then president-elect of the A.M.A., and in the fall, a second dinner meeting was held with William Dock of the Long Island Medical College as the guest speaker. About five hundred doctors attended each dinner meeting, with entertainment being provided by members. These dinners also were attended by 40 junior physicians who were guests of the society, through its committee for young physicians.

The latter committee set up plans in June for a loan fund for junior physicians which was approved by the board of directors and, since that time, numerous requests for loans have been received and taken care of when the need was indicated. This committee also is working on a plan with the San Francisco Dental Society whereby a panel of dentists will provide the usual high standard dental care for junior physicians in training and their immediate dependents at reduced cost based on the veterans' dental fee schedule.

In the past two years an effort has been made by the San Francisco Medical Society through its union labor committee and various representatives of the unions of the San Francisco Labor Council to work out a health and welfare plan for their members. A fee schedule that was set up is probably one of the highest for insurance work in the United States. However, neither the doctors nor the unions are 100 per cent satisfied with the results. Further meetings may iron out the "bugs." The principles as set down by the board of directors of the society regarding these health plans are as follows:

1. That all members of the society may participate. There shall be a free choice by physician which means no panels selected either by the insurer, a lay group, or the society.

2. That there must be no set or frozen fee schedule. The individual doctor's right to establish with his patient the fee to be paid must be respected.

3. There can be no third party placed in the middle of the all-important and confidential doctor-patient relationship.

4. The society will not participate in any capacity with any prepayment plans that fail to distinguish between physicians and surgeons and other types of practitioners.

5. The society, within these principles, stands ready at all times to advise and assist in all professional matters related to prepayment plans.

Under the direction of President Garnett Cheney, some 40 committees have been hard at work throughout the year, carrying out their assignments with diligence and dispatch. These committees constitute the backbone of this society, and credit for any good work done by this organization belongs primarily to them.

The aim of this society, in 1952, as expressed by the president, Stacy R. Mettier, is to endeavor to establish a closer and better relationship between the society and the people of the Bay Area, in addition to carrying on the excellent work of the past year.

ALLEN T. HINMAN, *Secretary-Treasurer*

NINTH DISTRICT

Alameda and Contra Costa Counties.

Donald D. Lum, Alameda, *Councilor.*

Alameda-Contra Costa Medical Association

The projects and accomplishments of this association are well covered in the report of Dr. Donald Lum, Councilor of the Ninth District, which appears under Report of Councilors.

HAROLD P. MALONEY, *Secretary-Treasurer*

TENTH DISTRICT

Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Solano and Sonoma Counties.

John W. Green, Vallejo, *Councilor.*

Humboldt County Medical Society

Under the very capable direction of President Herbert L. Moore, 1951 proved to be a year of considerable activity for all society members. There being a wealth of business matters which demanded prior attention, topics of academic interest were not too frequently presented at regular society meetings. However, since hospital staff meetings are so well attended, we have benefited from some excellent discussions on subjects of medical import.

In the interest of improving facilities for the care of patients in our county; of establishing improved rapport between the medical profession and labor and thus indirectly of furthering efforts to preserve our status as friends and counselors as well as healers of disease, the following work has been done by the society:

1. Development of an average, current fee schedule as applied to the general practice of medicine and available to our "Grievance and Ethics Committee."

2. A brochure for general distribution designed to stimulate patients in properly interpreting health and accident insurance coverage.

3. A resolution that the C.M.A. recommend that all prepaid health insurance companies give office and ambulant cases more coverage for diagnostic procedures so as to eliminate and prevent a growing trend of unnecessary hospitalization.

4. Organization of the Northern California Community Blood Bank and participation in the Armed Forces bleeding program.

5. A committee of physicians which regularly meets with representatives of labor and with health insurance representatives in order to detect any instance of physician abuse of the health insurance program, unreasonable demands by policyholders or their dependents, or misrepresentation of insurance coverage.

6. Establishment of a medical library available to all society members; centralization of care for cases of poliomyelitis.

President, vice-president, secretary and treasurer for the year 1952 are Francis O'Neil, E. Kenneth Smith, John W. Schonwald and Allan Watson respectively.

JOHN W. SCHONWALD, *Secretary*

Marin County Medical Society

Nineteen fifty-one was a worthwhile year marked by well programmed and attended meetings by 85 members under the able leadership of Warren L. Bostick. The presence of the members' wives at the dinners preceding the meetings has made each an event anticipated with pleasure.

Marin was host this year to the societies of Napa, Solano and Sonoma counties at the annual four-county meeting and golf tournament, at which Dr. John Cline was the guest speaker. The organization of the new Marin General Hospital is functioning well, and it is anticipated that the hospital will be receiving patients this summer. The hospital library will be named in memory of our former secretary, Carl W. Clark.

WILLIAM BURGETT SMITH, *Secretary-Treasurer*

Napa County Medical Society

Under the leadership of President Charles W. Brown our society had a successful year. There was some increase in membership which was sufficient to allow for an extra delegate to the state convention.

The meetings were held at monthly intervals with the exception of two summer months which past experience showed were poorly attended. Good programs were presented and good fellowship existed throughout the year.

During the year the society suffered the loss of two of our most honored members, Dr. Richard C. Burkett and Dr. Charles H. Bulson. Their death was a great loss to the society and the community.

As usual in November our annual meeting for the election of officers was held at the Veterans' Home, whose hospitality was enjoyed by all those present. At this

meeting Dr. Dale E. Barber was elected president for the coming year, Herbert B. Messinger, vice-president, and the undersigned secretary was reelected. Delegates to the convention were Dale E. Barber and George I. Dawson; alternates, Herbert B. Messinger and Walter H. Brignoli.

The December meeting was in the nature of a testimonial dinner for Dwight H. Murray, a member of our society for many years who is now giving powerful service to the A.M.A. as chairman of the board of trustees. This meeting was attended by many men prominent in the profession and in business life throughout the northern part of California. Several addresses were made by prominent men extolling the fine work which Dr. Murray has done for medicine in fighting socialism in all forms.

We hope the coming year will be equally successful.

ROBERT S. NORTHRUP, *Secretary*

Solano County Medical Society

The activities of the Solano County Medical Society were under the able guidance of their president, Dr. John G. Garthe, and Dr. Lionel W. Johnson, who was responsible for arrangement of a variety of good programs and outstanding speakers for the society. Dr. R. M. Gibbons, vice-president of the society, assisted Dr. Johnson.

Among the foremost accomplishments was the good attendance of each monthly meeting as well as the close relationship with the doctors situated in the surrounding military establishments who made a concerted effort to attend some of the scientific meetings in relatively large numbers.

Early in the year there was considerable activity pertaining to civilian defense planning and organization for possible disaster. The society went as far as establishing temporary casualty centers and assigned each member of the society to a particular center so that every member knew where he would be expected should the need arise.

The Solano County Medical Society accepted a plan for sickness-health insurance pertaining to individual members. Some 35 members subscribed to it.

The society continued to sponsor a team in the Peanut League this year as in the previous year.

The society also established the Solano County Chapter of the California Division of the American Cancer Society.

Prominent speakers addressed the society:

Dr. Paul Michael, pathologist of Oakland, spoke on Liver Tests and Their Relative Merits.

Dr. Edward B. Shaw of San Francisco spoke on the Treatment of the Common Communicable Diseases.

Dr. Vance Strange and Dr. W. W. Washburn spoke on Peripheral Vascular Disease and Indications for Lumbar Sympathectomy.

Dr. Clark, of Lederle's Laboratories, spoke on the use of Aureomycin, Chloromycetin and Terramycin.

Drs. Earl and Norman Lussier of San Francisco spoke on the Edentulous Jaw and the Use of Vitallium Implants.

Dr. Wartenburg spoke on Office Neurology.

The September meeting was under the auspices and in cooperation with the Cancer Commission, California Division. The society was addressed by Dr. Franklyn Hill, the director; Dr. Leonard G. Dobson spoke on the Management of Carcinoma of the Skin; and Dr. David A. Wood spoke on Early Detection and Diagnosis of Accessible Site Cancer.

The October meeting was highlighted by a visit from the president-elect of the California Medical Association, Dr. L. A. Alesen, who addressed the society on vital economic problems and public relations. Messrs. Ed Clancy and Glenn W. Gillette of the Public Relations Department, C.M.A., also spoke on the same subject.

A pre-Christmas and final meeting of the year was held in December at the Green Valley Country Club in conjunction with the ladies' auxiliary of the Solano County Medical Society. John K. Chapel, noted radio commentator from Oakland, addressed the society on current national events and on the Korean situation.

Among the new members admitted to the society were Dr. Van Buren of Benicia, Dr. Garrett of Vallejo, Dr. Cook of Dixon, and Dr. Zimmerman of Fairfield.

New officers elected for 1952 were Dr. H. Lammell, president; Dr. Lionel W. Johnson, vice-president; Dr. Wm. R. Hoops, secretary-treasurer.

IRWIN M. SHANKMAN, *Retiring Secy.-Treas.*

Sonoma County Medical Society

The year 1951 will be remembered by the Sonoma County Medical Society as its "year of achievement." The pioneering efforts of the previous two years were brought to fruition by the hard work and inspiring leadership of Horace F. Sharrocks, president.

In June 1951, a central office was established to keep up with the expanding activities of the society, with Mrs. Thomas Quayle as secretary. F. Leslie Manker, local practicing attorney, was again able to devote part time as our executive secretary to guide the activities of the office and advise the society legally, particularly in cases studied by the very active Medical Economics and Medical Protective committees.

During the year the society entered into a contract with the American Mutual Liability Insurance Company to provide malpractice and premise liability insurance to members at reasonable rates, under a plan in which every effort is made to adjust complaints before court action is filed.

A contract with the Redwood Empire Adjustment Bureau for the collection of doctors' accounts has proved mutually advantageous.

In December, because of its expanded activities, the society was incorporated.

Thirteen new members were admitted during 1951, bringing the total active membership to 113.

The emphasis on public relations, especially with the local press, was continued and, with the help of Mr. Glenn Gillette, Associate Director of Public Relations, California Medical Association, a code of cooperation with the newspapers was formulated. Organization of a speakers' bureau was started, a study of night and emergency calls was made and liaison established with lay organizations concerned with matters of public health, the practice of medicine, and so forth.

Intrasociety relations were improved by the expanded development of the *Bulletin*, by the approval of a new constitution and by the presentation of excellent scientific programs at the monthly meetings. The speakers included: Drs. Robert S. Stone, John Gibbs, Horace McCorkle, H. E. Parsons, L. D. Howard, Philip Arnot and Carl Anderson.

An instructive two-day Medical and Surgical Institute, sponsored by the California Medical Association, was held in March, and special meetings were held with the Woman's Auxiliary, including the annual barbecue, in July, at the home of Dr. and Mrs. William Makaroff.

The annual visit of the California Medical Association's officers, including Dr. Lewis Alesen, president-elect; John Hunton, executive secretary; Ben Read, Ed Clancy and Glenn Gillette, was a memorable one.

WILLIAM J. RUDEE, *Secretary*

ELEVENTH DISTRICT

Alpine, Amador, Butte, Colusa, Eldorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, Yolo and Yuba Counties.

Wayne E. Pollock, Sacramento, *Councilor.*

Butte-Glenn County Medical Society

The Butte-Glenn Medical Society has been handicapped in this past year due to a change in officers in mid-season, but by the end of the year had quite an admirable record. Dr. Dean Hoiland, president for this year, was drafted into the U. S. Army in May. Because of his impending draft he was unable to accomplish much during the first five months. Dr. Meredith Guernsey, who succeeded him as president, has been most active and under his guidance all committees were reapppointed and functioned very well. During this year we have established a new malpractice insurance-prevention program under the American Mutual Liability Insurance Co. At least two meetings have been devoted to the malpractice prevention program. The Butte-Glenn Medical Society has also set up a disability insurance program optional for all members. Poliomyelitis is now being treated in the Butte County Hospital under the guidance of the polio and public health committees and in cooperation with the Public Health Department. The Public Health Department under Dr. John Philp has been most active. New offices are completely equipped and functioning in both Oroville and Chico and the tuberculosis and public health education programs are well under control. The blood bank in the Butte-Glenn County area

is now operating very well in all four hospitals. A few minor technical difficulties have been ironed out and anyone in urgent need of blood can now receive same immediately. In the interest of good public relations a more active public service committee has been appointed for the latter part of 1951 and 1952. The public relations committee has instituted a radio program in the local Chico radio station, KXOC, devoting fifteen minutes' time every week to further good medical public relations. Dr. Meredith Guernsey has been elected as president of the Butte-Glenn Medical Society for the year 1952. Dr. Donald Casey is the vice-president and Dr. W. C. Chiapella, secretary.

W. C. CHIAPELLA, *Secretary*

Lassen-Plumas-Modoc County Medical Society

The Lassen-Plumas-Modoc Medical Society meets on call of the president. This is necessary because of the 200-mile-long territory involved and the variable road conditions. Three very interesting meetings were held during 1951. The first in the spring in Alturas was attended by one-third of the membership. Dr. Harper of Reno lectured on surgery in spastic conditions. The second meeting was held in conjunction with the Cancer Conference at Susanville. Guest speakers were John M. Kenney, M.D., of Stanford University School of Medicine, and Robert S. Pollack, M.D., of the University of California School of Medicine. The meeting was very much enjoyed by all attending. On November 17 Dr. Lewis A. Alesen, President-elect of the C.M.A., spoke to a good attendance of members and their wives at Susanville. All deeply appreciate his presence and stimulating speech. Short informative talks were given by John Hunton, Executive Secretary of the C.M.A.; Glenn W. Gillette, Associate Director of Public Relations of the C.M.A., and Ben H. Read, Executive Secretary of the Public Health League. Dr. J. W. Crever presided. Much appreciation is felt for the efforts of the speakers in attending our rather remote meetings.

ALLEN E. PRIEST, *Secretary*

Placer-Nevada-Sierra County Medical Society

Placer-Nevada-Sierra Medical Society held regular monthly meetings on the second Wednesday of each month, except for July and August of 1951. One meeting (June) consisted of a medical cancer symposium sponsored by the California Medical Association Cancer Commission and the California Division of American Cancer Society.

The November meeting was a dinner meeting held in conjunction with the election of officers.

Officers elected for 1952 are as follows: Vernon Padgett, Grass Valley, president; Carl Jackson, Auburn, vice-president; and T. J. Rossitto, Auburn, secretary-treasurer.

T. J. ROSSITTO, *Secretary-Treasurer*

Sacramento Society for Medical Improvement

Organized in 1868, our society is the oldest medical society in the state of California and has enjoyed steady growth since its inception. The society now has 272 members, many of whom are active in local and state medical affairs. Society meetings are held on the third Tuesday of every month, at which time speakers aid in keeping the membership informed of recent developments. An annual banquet is held on March 17, St. Patrick's Day, the anniversary of the foundation of the society. The December meeting is an annual business meeting, at which time the board of directors and C.M.A. delegates are elected. The officers are then elected from among members of the board at the January board meeting.

A history of the society, which includes a great many factors of interest to California medicine in general, has been written by a society member, J. Roy Jones, M.D. The history is in the form of a book entitled "Memories, Men, and Medicine" which has been published by the Sacramento Society.

As another milestone in progress, the society in 1950 hired a full-time executive secretary and launched a broad and extensive public relations program. As part of the program it has publicly announced an unqualified guarantee to every resident of the community of good medical care, 24 hours a day, regardless of ability to pay.

EDMUND E. SIMPSON, *Secretary*

Shasta County Medical Society

The Shasta County Medical Society now has 25 active members. During the past year there were two deaths and three new admissions, and two members of the society went on active duty with the armed services. Officers for 1952 are: J. L. Price, president; J. M. Kehoe, vice-president; and H. R. Eagle, secretary-treasurer.

Regular meetings of the society are held on the first Monday of each month.

H. R. EAGLE, *Secretary-Treasurer*

Siskiyou County Medical Society

Nineteen fifty-one was marked by the formation of the first organized medical staff at the Siskiyou County General Hospital, Yreka. The staff is open to and governed by all members of the Siskiyou County Medical Society.

The society enjoyed the meeting with Dr. Pollock, Councilor; Mr. Ben Read, Executive Secretary, Public Health League of California; Mr. Ed Clancy and Mr. Glenn Gillette, public relations representatives; and Dr. L. A. Alesen, president-elect in November 1951 and receiving directly from them statements as to the problems and policies of the California Medical Association.

D. L. MEAMBER, *Secretary-Treasurer*

Tehama County Medical Society

Tehama County is fortunate in having added approximately 40 new beds which is a considerable increase for a county of twenty thousand. A new district hospital of 25 beds has been constructed at Corning in the southern part of the county which will greatly facilitate medical and hospital care in that area. This hospital will be opened in January 1952. A new wing is being built on the St. Elizabeth Hospital in Red Bluff with an addition of approximately 15 beds and modernization of the main building is also being done.

O. T. WOOD, *Secretary*

Yolo County Medical Society

The Yolo County Medical Society held regular monthly meetings during the year except in July and August. At each meeting a paper was presented and a discussion was held by outstanding medical men on a variety of subjects related to the practice of medicine. One meeting was presented by the Cancer Committee of the society with the help of the National Cancer Education Campaign. One meeting was devoted to a diagnostic clinic for tuberculosis and other chest diseases supported by the Yolo County Tuberculosis Association. One meeting was partially devoted to a discussion of physician-patient relationships by a team of officers from the California Medical Association.

The society was active in support of the procurement of a full-time public health officer for Yolo County. Dr. John Rafferty was appointed to this position in May.

New members admitted during the year were Drs. Robert L. Pye, William T. Robinson, John F. Hollister, Spencer T. Chester, Donald E. Wyrens, Eugene W. Kenney, and John Rafferty.

RICHARD J. CUNDIFF, *Secretary*

Yuba-Sutter-Colusa County Medical Society

The beginning of the year 1951 found our Medical Society nicely located in its own exclusive building, the use of which has been donated to our society by Mr. Fred Moore, manager of the Rideout Memorial Hospital. The official meeting place is known as the Rideout Memorial Cottage. Subsequently, a committee was appointed which, from a society check for $500, purchased furnishings for our meeting place.

During the year, a physician's widow has been regularly receiving a benevolence check through the courtesy of the C.M.A. Benevolence Committee.

The guest speaker at our January meeting was Dr. Charles Blumenfeld of Sacramento, pathologist, who showed lantern slides on the special technique of cervical cancer smears.

The guest speaker for February was Dr. Joseph Giansiracusa, assistant professor of medicine of U. C. His subject was clinical use of ACTH and cortisone.

The March guest speaker was Dr. Joseph H. Harris, State Mental Hygiene Clinic. A medical motion picture was also shown, on gastrointestinal cancer.

Emergency medical service, on a rotating physician basis and a 24-hour schedule, has now been in operation for the past two years, and has been very satisfactory to all concerned.

The secretary attended the annual conference of county medical society secretaries and made a complete report to the society at the April meeting.

At the April meeting, a preview showing of a film on technique of examination in breast cancer was given and it was approved for showing to women's organizations. A fee of $7.50 for Civil Service examinations, including urinalysis, was approved, and all members were given written notice accordingly.

Meetings were not held in June or July.

A business meeting was held in August, and it is a matter of record that we disapproved the loaning of medical text-books to attorneys.

Our annual dinner meeting with the Auxiliary was held on October 11 and the following guests were present: Lewis A. Alesen, M.D., President-elect, C.M.A.; Mr. Ed Clancy, Director of Public Relations, C.M.A.; Mr. Glenn W. Gillette, Associate Director Public Relations, C.M.A.; Mr. Ben Read, Executive Secretary, the Public Health League of California.

Guest speaker at the November meeting was Dr. Edwin J. Wylie, U. C. His subject was Peripheral Vascular Disease Surgery.

A business meeting was held in December, at which time the following officers for 1952 were elected: President, Robert L. Ayers; vice-president, Charles B. Kimmel; secretary-treasurer, Leon M. Swift; delegate, Stanley R. Parkinson; alternate, Joseph J. Salopek.

Considerable A.M.A. literature was distributed by the local members during 1951. At the December meeting, Dr. Francis P. Wisner presented in detail the civilian medical defense program, which is now set up on a standby basis, ready for emergency call at any time disaster should strike.

LEON M. SWIFT, *Secretary*

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Surgical Considerations in Diseases of the Pancreas

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Los Angeles

SUMMARY

Present data indicate that surgical treatment of pancreatitis is most successful in cases in which the disease is caused by extrahepatic disease of the biliary tract.

Operation is also effective in cases of islet cell tumors, cysts, lithiasis, trauma and annular pancreas.

Results seem to justify radical operation for early carcinoma of the ampulla of Vater and pancreas.

The value of surgical treatment in other lesions of the pancreas is doubtful.

IN recent years important advances have been made in the diagnosis and surgical treatment of pancreatic disease. Operations for pancreatic lesions are being performed with increasing frequency as more experience in this relatively new field of surgery accumulates. Much remains to be accomplished in the recognition and treatment of pancreatic disease.

ANATOMY

The pancreas is located in a deep retroperitoneal position behind the serosal floor of the omental bursa traversing the upper abdomen and is in intimate relationship withe duodenum, the common bile duct and large vascular structures—the inferior vena cava, portal tributaries, the aorta and the superior mesenteric artery. The splenic artery grooves the superior surface and the tail of the pancreas is closely related to the spleen. The main pancreatic duct of Wirsung traverses the entire length of the gland and opens into the ampulla of Vater, usually in association with the common bile duct. Some controversy persists with regard to the incidence of an anatomic common channel for the common bile and pancreatic ducts. This incidence has been variously reported from around 30 to 40 per cent[11] up to 90 per cent.[9] The accessory duct of Santorini is usually present and communicates between the main duct and the duodenum proximal to the ampulla of Vater.

The pancreas has both exocrine and endocrine functions. Secretions elaborated by the acinar cells and discharged into the duodenum via the ductal system contain proteolytic, amylolytic and lipolytic enzymes. The islets of Langerhans, a separate histological component of the pancreas, are concerned with the hormone insulin and carbohydrate metabolism. They are said to be evenly distributed throughout the gland with more being present in the body and head because of the greater mass of pancreas in these areas.

Pancreatic secretions are under the control of both nervous and hormonal mechanisms. The vagi carry the secretory fibers to the gland, the sympathetic nerves being distributed to the blood vessels. When the duodenal mucosa is contacted by acid, the hormone secretin is elaborated, stimulating pancreatic secretion.

PANCREATITIS

The most commonly encountered pancreatic lesion is pancreatitis. The exact etiologic delineation of this disease remains obscure but experimental and clinical studies indicate several possible causative factors. Experimentally, when bile is injected into the pancreatic ducts of dogs, acute pancreatitis usu-

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ally occurs. Investigations by Doubilet and Mulholland[5] support the contention that a common passageway between the common bile and pancreatic ducts with reflux of bile into the pancreatic duct is the mechanism responsible for the development of acute pancreatitis in man. It is theorized that the reflux is incident to a stone or edema of the ampulla of Vater or spasm of the sphincter of Oddi. However, opinion is divided as to the incidence of a common passageway in the population as a whole and in the group of patients with pancreatitis. Pancreatitis has been reported on a number of occasions in aberrant pancreatic tissue in association with pancreatitis of the main gland. It is difficult to reconcile this phenomenon with the common channel theory. In such a case recently observed at Wadsworth Veterans Administration Hospital, radiopaque material was injected into the duct of Wirsung, which was exposed during distal pancreatectomy, and free flow into the duodenum, with no evidence of obstruction was observed.

Ligating the pancreatic duct and injecting secretin, in experiments with animals, can produce pancreatitis; and it is believed obstruction of the pancreatic duct by a calculus, stricture or tumor may be a causative factor in man. Trauma, including operative trauma, may be a cause of pancreatitis. Infection, circulatory stasis, thrombosis and embolism are thought to be etiological factors. The frequent coexistence of biliary tract disease in association with pancreatitis is well known, and it has been noted that many patients who have recurrent pancreatitis give a history of excessive use of alcohol.

Acute pancreatitis is frequently divided into two types, acute interstitial or edematous pancreatitis and acute hemorrhagic pancreatitis or pancreatic necrosis. Disease of the second type is considered by many to be a more pronounced degree or advanced stage of the first.

The diagnosis of acute pancreatitis is often difficult to make and, while it is not an uncommon cause of acute abdominal distress necessitating surgical intervention, in the past the diagnosis was not commonly made clinically. The disease is being recognized with increasing frequency, however. At Wadsworth Hospital the diagnosis was made in ten instances in 1948, 19 in 1949 and 30 in 1950. Although the disease is said to occur most frequently in middle age, in 65 cases of record at Wadsworth Hospital the incidence was fairly evenly distributed in each decade from 20 to 60 years. A history of alcoholism is frequently obtained (in 40 per cent of the cases in the Wadsworth series). The onset is usually sudden (67 per cent of the Wadsworth cases) with fairly severe epigastric pain as the first and most prominent symptom (96.8 per cent) of the cases in the present series). There is usually referral of pain to the back, and associated nausea with frequent vomiting. Upper abdominal tenderness and muscle spasm are early signs; but frequently, probably owing to the deep-seated position of the pancreas, there is less rigidity than would ordinarily be associated with other conditions producing upper abdominal pain of comparable severity. There is often accompanying abdominal distention, and reduction or absence of peristalsis.

The acute hemorrhagic form or pancreatic necrosis, much less common than the milder form, is attended by a high mortality rate (four deaths in five cases at Wadsworth Hospital). It is characterized by excruciating pain, shock, pallor, profuse vomiting and often pronounced abdominal distention. Discoloration about the umbilicus (Cullen's sign) or of the flanks (Gray-Turner's sign) may be present.

Determination of the serum amylase is a valuable and fairly accurate test in establishing the diagnosis of acute pancreatitis, although low values may be obtained in pancreatic necrosis and high values in acute cholecystitis and perforated or penetrating peptic ulcer with associated pancreatitis. Significantly elevated serum amylase may be present within six to 12 hours after onset and may persist for several days. Increase in the value for urinary diastase appears later, in 24 to 48 hours. The serum lipase test is generally considered less useful than serum amylase determination. In the more severe form of the disease a pronounced decrease in serum calcium may occur, apparently resulting from the formation of calcium soaps in and about the pancreas. A serum calcium level below 7 mg. per 100 cc. is considered fatal.

The current consensus is that medical management is the treatment of choice for acute interstitial pancreatitis, except when doubt exists as to the diagnosis. The control of pain presents a problem. The use of morphine is not thought advisable since it is known to induce spasm of the sphincter of Oddi. Using atropine or nitroglycerine as substitutes has been advocated but these drugs are not always effective. Success with block of the splanchnic nerves either with procaine locally or by Etamon® has been reported, but other investigators have not had uniformly good results with this procedure. The same is true of the intravenous use of procaine. Continuous epidural analgesia has also been employed. After the acute attack subsides, any coexisting disease of the biliary tract should be sought for and, if found, treated surgically. Surgical treatment for acute hemorrhagic pancreatitis has been advocated, drainage of the pancreatic area and T-tube drainage of the common duct having been suggested. The formation of suppurative pancreatic abscess or pseudocyst necessitates surgical treatment.

CHRONIC RELAPSING PANCREATITIS

The characteristic clinical feature of chronic relapsing pancreatitis is recurrent episodes of upper abdominal pain. The pain often lasts for days rather than a few hours as in cholecystitis, is often referred to the back, to the left flank or to the chest, and is not relieved by vomiting. Narcotic addiction is frequently associated with the disease. As the attacks recur there is permanent injury to the pancreas resulting from edema, hemorrhage and necrosis, producing disturbance in the function of acinar or islet tissue. There is ensuing weight loss, nausea and

vomiting, intolerance of food, anorexia, malaise and change in bowel habit. In spite of the fact that steatorrhea or creatorrhea may occur owing to deficiency in the external pancreatic secretion, constipation resulting from narcotic addiction and poor diet may be a prominent symptom. Excessive use of alcohol may precipitate an attack, but many patients say it acts as a temporary sedative and advance this as the reason for alcoholism.

Chronic relapsing pancreatitis may be treated surgically or by conservative means. Conservative management consists of supportive measures and opiates for pain during the acute attack, elimination of the use of alcohol, prescribing a bland low-fat diet, supplying pancreatin in cases of deficiency, and management of diabetes which may be present.

PANCREATIC CALCINOSIS AND PANCREATIC LITHIASIS

In general pancreatic calcinosis and pancreatic lithiasis are complications of chronic relapsing pancreatitis. However, occasionally large calculi may occlude the main pancreatic duct and thus be the cause of pancreatitis. In this rare circumstance, removal of the stones and T-tube drainage of the dilated pancreatic duct (Figure 1) may effect cure. The term *pancreatic lithiasis* is used to designate calculi within the pancreatic ducts. *Calcinosis* implies a more diffuse calcification. However, even when there appears to be diffuse parenchymal calcification, it is said that the deposits can be shown to lie within epithelium-lined cavities representing small ductules or acini. Patients characteristically have chronic, severe, demoralizing pain and have associated symptoms of pancreatic deficiency. Of 13 patients observed at Wadsworth Veterans Administration Hospital, seven were alcoholics, four had associated diabetes and five had pronounced symptoms of pancreatic exocrine deficiency.

SURGICAL TREATMENT OF CHRONIC PANCREATITIS

The surgical procedures used in the treatment of chronic relapsing pancreatitis may be considered as direct, indirect or a combination of direct and indirect.

Indirect Methods:

Cholecystectomy and Choledochostomy. The importance of eliminating any coexistent biliary tract disease is well recognized. This method is applicable only when such disease is present, however. In general, the best results with operative treatment are obtained in cases of that order.

Biliary Diversion. Cholecystojejunostomy and choledochojejunostomy have been performed in the hope of discouraging reflux of bile into the pancreatic ducts. Improvement following such procedures has been reported, but recurrences have often followed the remissions.

Sphincterotomy. This procedure attempts to overcome spasm of the sphincter of Oddi, for it is believed that the spasm causes reflux of bile into the pancreas. This procedure was carried out in six

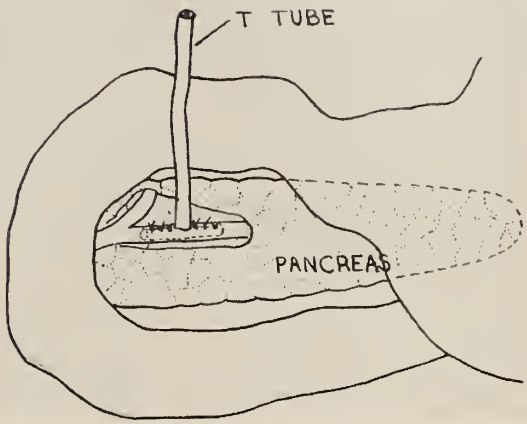

Figure 1.—Method of T-tube drainage following removal of stones from the pancreatic duct.

patients at Wadsworth Hospital. It is too early to fully evaluate the results. Doubilet and Mulholland[6] reported good results with this procedure.

Operations on the Stomach. Richman and Colp,[12] who are advocates of this method, contend that subtotal gastric resection accomplishes diversion of the gastric contents from the duodenum and thereby reduces the tendency to spasm of the sphincter of Oddi and also reduces the response of external secretion to the ingestion of food. Results from this procedure have been reported as disappointing, however. At Wadsworth, one patient with chronic pancreatitis was unimproved by subtotal gastric resection.

Interruption of Sympathetic Nerves. This procedure is directed at the control of chronic pancreatic pain. Recent work by Bliss and co-workers[1] on the localization of referred pancreatic pain indicated that the sympathectomy should be bilateral. Vagotomy combined with sympathectomy has also been utilized. Reports as to the success of these procedures are conflicting.

Direct Methods:

Pancreaticolithotomy. On rare occasions large calculi are found blocking the duct of Wirsung, and removal of the calculi may be followed by good results. More frequently, however, the stones are distributed throughout the gland and removing them through the duct is impossible.

Ligation of the Duct of Wirsung. This procedure has been performed in several instances, but has not proven to be effective.

Pancreaticojejunostomy. Anastomosis of the duct in continuity to a loop of jejunum has been suggested by Cattell and Warren.[2]

Distal Pancreatectomy. This procedure is applicable only when the process is limited to the distal portion of the gland, as in injury to the body of the pancreas with stricture of the duct of Wirsung.

Pancreaticoduodenectomy. This procedure is reported by Cattell and Warren[2] as giving the best results of any they have employed for chronic relapsing pancreatitis and pancreaticolithiasis. The

TABLE 1.—*Operations for Chronic Pancreatitis Performed at Wadsworth Hospital*

Type of Operation	No. Cases	Improved	Unimproved	Not Followed	Died
Biliary Tract Operations	15	8	3	4	....
Sphincterotomy	6	2	2	1	1
Subtotal Gastric Resection	1	....	1	....	....
Abdominal Exploration	3	2	1	....	....

operative risk and technical difficulties are against its wide use.

Total Pancreatectomy. The mortality rate associated with this procedure has so far been too high to justify its use except as a last resort because of intractable pain.

Results of various means of surgical treatment of patients with chronic pancreatitis at Wadsworth Hospital are given in Table 1.

Carcinoma of the Pancreas. The difficulty of making an early diagnosis of carcinoma of the pancreas is well known. Usually the disease is not recognized clinically until after opportunity for cure is gone. The site of development has an important influence on what symptoms may occur and how soon the lesion will be discovered clinically. A neoplasm arising adjacent to the common duct, unlike lesions in the body or tail of the pancreas, may produce recognizable jaundice early in its development.

Contradictory to older teachings, pain is a prominent symptom in most cases of carcinoma of the pancreas. Of 37 patients with carcinoma of the pancreas studied at Wadsworth Hospital, 31 complained of pain. Characteristically the pain is dull, constant and boring in nature with frequent extension to the back.

There is a high incidence of loss of weight. Anorexia and vomiting are also prominent symptoms. In carcinoma of the head of the pancreas, the onset of pain consistently precedes the presence of jaundice. The opposite is true of carcinoma of the ampulla of Vater, in which pain is often absent. In addition carcinoma of the pancreas may give rise to obstruction of the duct of Wirsung, causing symptoms of external pancreatic deficiency.

The diagnosis of carcinoma of the pancreas is frequently difficult even at operation. Pancreatitis involving the head of the organ may be indistinguishable macroscopically from carcinoma. In addition there is frequently a certain amount of pancreatitis distal to the site of a carcinoma. Cattell[3] emphasized the importance of the presence of a dilated pancreatic duct which can be palpated proximal to a carcinoma.

The reported incidence of cases in which the tumor is resectable is discouragingly low. Cattell and Pyrtek[4] reported carcinoma of the pancreas and ampullary carcinoma was resectable in only 34 per cent of their series, while the corresponding incidence in cases of pancreatic carcinoma observed at the Mayo Clinic[10] in 1949 was 5.7 per cent.

Of 37 patients with carcinoma of the pancreas at Wadsworth Hospital, ten were subjected to cholecystojejunostomy, eight to pancreaticoduodenectomy (Whipple operation), ten to exploratory laparotomy, two to miscellaneous procedures; and ten were not operated upon. The average survival time postoperatively after exploratory laparotomy was two months. Although seven of the ten patients on whom cholecystojejunostomy was performed had some improvement following the procedure, only one of the ten was living five months postoperatively. Average postoperative survival time following cholecystojejunostomy was seven months. Of the eight patients subjected to pancreaticoduodenectomy, one died in the immediately postoperative period and five patients were living at the time of the analysis, three to 14 months after operation.

APPRAISAL OF PANCREATICODUODENAL RESECTION FOR CARCINOMA OF THE PANCREAS

There have been only isolated instances of five-year survival after resection for carcinoma of the head of the pancreas. Cattell and Pyrtek[4] in 1949 reported follow-up studies on 30 patients who had had resection for removal of carcinoma of the head of the pancreas and of 20 who had been operated upon for carcinoma of ampulla of Vater. Only 12 of the 48 survivors had been operated upon before 1944 and were suitable for study by the five-year measure of survival. Three of the 12 (25 per cent) were living and well five years after operation. These three had had ampullary carcinoma. Six of the 12 lived three years or more. Of 25 patients who survived pancreaticoduodenectomy for carcinoma of the head of the pancreas, 18 died after an average survival of 11 months. The longest survival period for any of the remaining seven patients was 41 months. Recent mortality rates for the operation vary from 7.3 per cent to 26.2 per cent.[2]

It would appear that resection for carcinoma of the ampulla of Vater is a procedure which achieves an acceptable degree of long-term survival with a reasonably low operative mortality. The results after resection for carcinoma of the head of the pancreas are poor. In spite of this it seems that an attempt should be made to remove a malignant lesion when feasible if there is any prospect, no matter how small, of successful outcome.

TRAUMA

Injuries to the pancreas are not common but the results of such injuries can be quite serious owing to hemorrhage, escape of activated pancreatic enzymes into the surrounding tissue, or diversion of the pancreatic secretion when the duct of Wirsung is divided near the ampulla. Traumatic injuries may be penetrating, non-penetrating or operative. Penetrating injuries in civilian life are rare but this possibility should be kept in mind in any penetrating wound in the upper abdomen. Non-penetrating wounds are more common and result from indirect force as in automobile accidents, falls, etc. Operative trauma may occur during procedures on the stomach, duodenum, biliary tract or spleen.

The clinical symptoms and laboratory data are similar to those in acute pancreatitis, and determination of the serum amylase level is a useful aid in diagnosis. Complications include acute pancreatic edema and necrosis, immediate or delayed massive hemorrhage, pancreatic cysts, pancreatic abscess, diabetes, steatorrhea, internal and external pancreatic fistulae, subdiaphragmatic abscess and pancreatic calcification. Initial care should be directed at control of hemorrhage, evacuation of hematomas, and adequate drainage. The skin should be protected by sump drain if a fistula occurs. A persistent fistula may be treated by distal pancreatectomy if it involves the body or tail of the organ. Persistent fistulas arising near the ampullary portion of the duct of Wirsung should be treated by anastomosing the duct to the jejunum.

Kipen[8] reported a case, from Wadsworth Hospital, in which pancreatic calculosis developed following trauma. In one other case of pancreatic trauma observed at Wadsworth, pancreatitis developed after a blow to the abdomen. It was necessary later to drain a pancreatic abscess.

PANCREATIC CYST

Pancreatic cysts may be divided into the following types: Congenital cysts, retention cysts, cystadenomas, and pseudocysts. Congenital cysts are only occasionally of surgical interest. They result from obstruction of the pancreatic ducts and lead to multiple cystic dilatations and occasionally to pancreatic insufficiency. They are often associated with atresia of the bowel, bronchi, cystic ducts and ureters.

The other cystic lesions of the pancreas produce symptoms of regional pressure or pancreatic insufficiency. The pressure symptoms depend on the size and location of the cyst. Duodenal, common duct, portal vein, ureteral or vena caval obstruction may result, or there may be torsion of omental vessels. There may be a rapid change in the size of the mass caused by hemorrhage into the cyst or discharge of the contents through pancreatic ducts. As the cyst enlarges and pushes forward, it may extend above the stomach (Figure 2), or between the stomach and the colon, or inferiorly to the colon.

Surgical treatment consists of excision, marsupialization and drainage, or internal drainage. Internal drainage may be carried out by anastomosis to a loop of jejunum or Roux-Y (Figure 3). Another method described is transgastric cystogastrostomy. Cattell and Warren[2] expressed the belief that there has been a recent tendency to indiscriminate use of internal drainage and stated that the procedure should be used more selectively. At Wadsworth Hospital, excision of a cyst was done in one case, marsupialization and drainage carried out in three cases, and internal drainage in two others. Good results were obtained with each method as far as recurrence is concerned.

Figure 2.—Cyst in tail of pancreas producing extrinsic pressure defect on greater curvature of stomach.

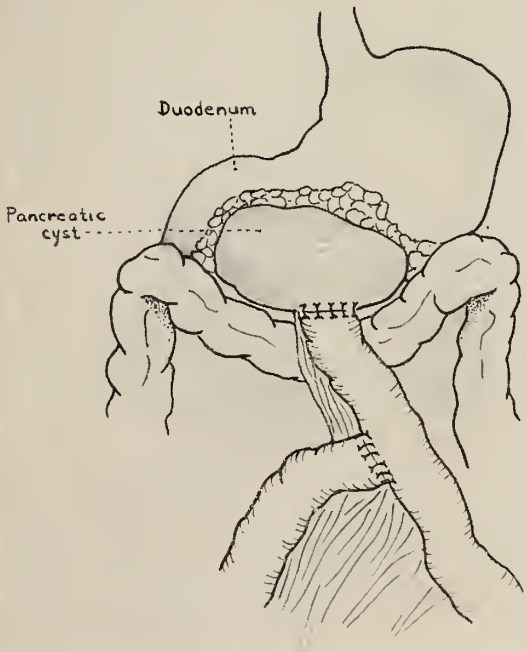

Figure 3.—A method of internal drainage of a pancreatic cyst.

ISLET CELL TUMORS AND HYPERINSULINISM

The first report of a case of tumor of the islets of Langerhans associated with hyperinsulinism was made by W. J. Mayo in 1926. Since then a number of these cases have been reported. The triad of observations which are cardinal features of the disease was first described by Whipple: (1) Attacks of nervous or gastrointestinal disturbances during the

fasting state that are (2) associated with a sugar content in the blood less than 50 mg. per 100 cc. and that are (3) relieved promptly when glucose is given. This condition must be differentiated from functional hypoglycemia. There is no single criterion for differentiation. Fasting blood sugar determinations are more valuable than tolerance tests, and a history of increasing severity and frequency of attacks is an indication of organic hyperinsulinism. A high protein diet often brings about improvement in functional hypoglycemia.

Howard, Moss and Rhoads[7] collected reports of 398 cases of islet cell tumor and hyperinsulinism from the literature. The tumors originated at one site in the pancreas about as often as in another, although there was a slightly higher incidence in the body and tail of the organ. There were multiple tumors in 12.6 per cent of cases. In seven cases the lesions occurred in ectopic pancreatic tissue. In 37 of 118 cases in which a tumor could not be located during the original exploration, an islet tumor was subsequently found to be present. In 12 of these 37 cases the tumor was removed when subtotal pancreatectomy was done, and in 12 others a tumor was found at re-exploration. Islet cell tumor could not be demonstrated in 81 cases. Partial pancreatectomy was performed in 56 of these with good results in 46.4 per cent.

Recognition of the adenoma at operation is often difficult, for often the lesion is small and of virtually the same consistency and color as normal pancreatic tissue. When no tumor can be demonstrated, there is a good possibility that it is present but is so small that it is not recognizable. In such circumstances, resection of the distal two-thirds or three-quarters of the pancreas has been advised. Good results may be expected if there is an adenoma present in the resected portion of pancreas; and good results sometimes occur even when no tumor is present. In experimental animals, 90 per cent of the pancreas must be resected to produce diabetes; and Stevens[13] reported a case in which all the pancreas but a small portion of the tail was resected for carcinoma without subsequent development of diabetes. At Wadsworth Hospital a patient with hyperinsulinism was subjected to exploratory operation and no tumor was found. The distal two-thirds of the gland was resected. After the operation the content of sugar in the blood, when fasting, did not return to the low preoperative levels, but the patient continued to have epileptiform seizures, which apparently were idiopathic and not related to hypoglycemia.

ANNULAR PANCREAS

Annular pancreas is a rare condition. There are only 54 cases reported in the literature and only 15 in which the patient was treated surgically. The correct diagnosis was made preoperatively in only one instance. All of the 15 patients operated upon had some degree of duodenal obstruction. Three had duodenal ulcers.

The condition caused symptoms in about one-third of the cases reported. Symptoms of duodenal obstruction, oddly enough, did not appear in some instances until the fifth or sixth decade of life. Lehman described as a roentgenographic characteristic a narrowing of the second portion of the duodenum with an indentation laterally. In a number of instances, however, only a segmental narrowing of the second portion of the duodenum with proximal dilatation was present.

The condition is characterized by a ring of pancreatic tissue around the second portion of the duodenum. The annular portion of the gland should not be divided or resected because of possible injury to the pancreatic duct and subsequent pancreatic fistula. In addition there is often an associated duodenal atresia which would not be relieved by such a procedure. Treatment consists of gastroenterostomy or duodenojejunostomy, the latter probably being the treatment of choice. If gastric or duodenal ulcer is present, gastric resection should be done.

One patient with annular pancreas was operated upon at Wadsworth General Hospital. The diagnosis was not made preoperatively. Gastroenterostomy was performed and symptoms were relieved. In roentgen studies, segmental narrowing in the second portion of the duodenum, with proximal dilatation, were observed.

REFERENCES

1. Bless, W. R., Burch, R., Martin, M. M. and Gallinger, R. M.: Localization of referred pancreatic pain induced by electrical stimulation, Gastroenterology 16:317-324, Oct. 1950.

2. Cattell, R. B., and Warren, K. D.: Pancreatic surgery, New England J. of Med. 224:975, June 1951.

3. Cattell, R. B.: Technic for pancreaticoduodenal resection, S. Clin. North America 28: 761-775, June 1948.

4. Cattell, R. B. and Pyrtek, L. J.: Appraisal of pancreaticoduodenal resection; follow-up study of 61 cases, Ann. Surg. 129: 840-849, June 1949.

5. Doubilet, H. and Mulholland, J. H.: Recurrent acute pancreatitis; observations on etiology and surgical treatment, Ann. Surg. 128:609-638, Oct. 1948.

6. Doubilet, H. and Mulholland, J. H.: Surgical treatment of pancreatitis, S. Clin. North America 29:339-359, April 1949.

7. Howard, J. M., Moss, N. H. and Rhoads, J. E.: Hyperinsulinism and islet cell tumors of the pancreas, Internat. Abst. Surg. 90: 417-455, May 1950.

8. Kipen, C. S.: Pancreatic calculosis following trauma; report of case. Surg. 27:914-918, June 1950.

9. Millbourn, E.: On acute pancreatic affections following gastric resection for ulcer or cancer and possibilities of avoiding them, Acta Chirurgica Scandinav. 98:1-21, 1949.

10. Priestley, J. T., Walters, W., Gray, H. K. and Waugh, J. M.: Annual report on surgery of the biliary system and pancreas for 1949, Proc. Staff Meet. Mayo Clinic 25:685-692, Dec. 1950.

11. Rienhoff, W. F. Jr. and Pickrell, K. L.: Pancreatitis; anatomic study of pancreatic and extrahepatic biliary systems, Arch. Surg. 51: 205-219, Nov.-Dec. 1945.

12. Richman, A. and Colp, R.: Chronic relapsing pancreatitis; treatment by subtotal gastrectomy, Ann. Surg. 131: 145-158, Feb. 1950.

13. Stevens, G. A.: Surgical treatment of neoplastic obstruction of extrahepatic biliary tract, Arch. Surg. 53-627, Dec. 1946.

The *Don'ts* of Spinal Anesthesia

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SUMMARY

Spinal anesthesia is an essentially safe procedure with no unavoidable complications, except headache and backache in a relatively small number of cases, if certain well defined contraindications are observed and if there is rigid adherence to a careful and rational technique of administration and of preparation of materials.

SINCE spinal anesthesia is the most satisfactory for certain operations, public skepticism of it, which apparently is increasing in some localities, ought to be dispelled wherever possible. Some neurosurgeons[3] also censure the method, although not all of their objections are well founded; and it is probable their proposed interdiction of spinal anesthesia save in the few cases in which other methods are contraindicated would lead only to an increase in the number of complications from general anesthesia. Studies now in progress[1] would seem to indicate that there are fewer complications from spinal than from general anesthesia. With care born of knowledge of the pitfalls to be avoided in administering spinal anesthesia, these can be reduced even further. Headache and localized backache are the only complications which at present cannot be completely eliminated.

There is a strong testimonial to the safety of the method in the fact that over a period of 50 years spinal anesthesia has been given in a great many cases by relatively inexperienced physicians with astonishingly few complications.

To be sure, anesthesiologists must be cognizant of criticism and of possible complications and must attempt to improve their methods—but this applies also to general anesthesia. If spinal anesthesia is administered with the same careful consideration as general anesthesia, complications will be even fewer and no more serious. It is a method with merit, but, like many fine and delicate things, it must be handled with care. The majority of difficulties stem from improper choice of method or from careless administration.

Choice of method may be considered in the light of two major factors, psychologic and physiologic. Certain rules in the form of *do* and *don't* can be worked out.

Of the psychologic *don'ts*, the most important concerns prejudice against spinal anesthesia. Don't give spinal anesthesia to a patient who doesn't want it. No matter how annoying his attitude or how foolish his reasons may seem, respect his prejudices. Not always, but often, one should attempt to find out why the patient objects—it may be simply that he doesn't want to be awake. If so, the problem is easily solved. But no great effort should be made to change his mind unless there is a real indication for spinal anesthesia. A corollary is, do insist upon spinal anesthesia, even in the face of the patient's or the surgeon's objections, if the method is definitely indicated. The anesthesiologist's judgment and experience should be the final deciding factors and usually will be accepted without reservation if well explained.

The surgeon's objections should be respected, too, insofar as is practicable. Often an anesthesiologist will work with a surgeon whose personality is unsuited to spinal anesthesia. His objections to the method may stem from within himself, or they may be more objective; but, whatever they are, they ought to be considered as long as they do not endanger either the patient or the position of the anesthesiologist.

Physiologic contraindications are based on disturbance of the cardiovascular system and on disease of the central nervous system.

Don't give spinal anesthesia to patients with coronary artery disease, pronounced arteriosclerosis, valvular heart disease, aortitis or severe hypertension. The method requires of the cardiovascular system rather abrupt compensations, which often cannot be made if these diseases are present. It should be noted, however, that few of these contraindications are absolute; other factors in the patient's immediate situation may sway the balance in favor of spinal anesthesia.

Don't give spinal anesthesia to anyone with a very low hemoglobin content in the blood; 8 gm. per 100 cc. is considered the minimum. By its sympathetic blocking effect, spinal anesthesia increases the size of the vascular pool and creates a larger area for the already diminished hemoglobin to supply with oxygen.

For the same reason, don't use spinal anesthesia when the patient is in shock. The aim is to increase the circulating blood volume, not decrease it. The vasomotor system is already taxed to its limit trying to combat shock. It is not advisable to increase its load.

For a patient with a distended, obstructed bowel, spinal anesthesia is a poor choice, for two reasons: (1) sudden release of tension in the bowel may precipitate a vascular collapse from which recovery is difficult or impossible: and (2) there is danger of vomiting and aspiration of gastrointestinal contents.

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A final don't on the basis of cardiovascular disturbance is, don't use spinal anesthesia for operations above the diaphragm.

Contraindication of spinal anesthesia because of central nervous system disease is absolute if the disease is active; meningitis, multiple sclerosis, progressive muscular dystrophy, herpes zoster, and spinal cord tumor are some of the more common.

Don't use spinal anesthesia for patients who have had poliomyelitis or syphilis. Probably this is not a necessary *don't*, for there is little likelihood of doing harm. Perhaps it should be considered a psychological *don't*, based on fear that the method or the anesthetist will be blamed for possible subsequent developments.

Disease of the spinal column should be viewed in the same light. Infections of the bone, of course, should proscribe spinal anesthesia, and this is true also of fractured vertebrae. Recently, Smolik and Nash[4] reported a case of adhesive arachnoiditis following operation for protruded lumbar disc, with the patient under general anesthesia. It is likely that if the anesthesia had been spinal, that is where the blame would have rested.

Nevertheless, spinal anesthesia may and should be used for lumbar laminectomy, especially for large, heavy-set male patients who are such difficult subjects for general anesthesia.

There are two common diseases with central nervous system manifestations—diabetes and pernicious anemia—which must be considered with care. With pernicious anemia, general anesthesia should be the method of choice, but with diabetes regional anesthesia is frequently preferred. Here again caution undoubtedly springs from fear of being blamed for something which could have happened anyway and certainly is not caused by the injection of the anesthetic agent.

Extreme obesity, especially if the patient must be in the Trendelenburg position, is another contraindication to spinal anesthesia.

There remain the technical *do's* and *don'ts*.

Do take great care in preparation. Cleanse the patient's back well. Wear gloves. Drape adequately.

Don't use corrosive solutions to sterilize the ampoules. Keep the sterilizing solution well colored, so that if any of it enters the ampoule, it may be detected easily.

Do rinse needles before using.

Don't inject through infected areas. If there is furunculosis or dermatitis present, avoid the method if possible, but certainly avoid the area.

Don't inject in the presence of persistent paresthesia.

Don't inject if blood is aspirated when the tap is made.

Don't use spinal anesthesia if there is pain out of proportion to the suspected disease.

Do inspect the ampoules carefully, and do read the labels.

Don't use concentrated solutions. The maximums are: tetracaine, 0.5 per cent; procaine, 5 per cent; metycaine, 4 per cent; nupercaine, 0.1 per cent.

With regard to technique, make every move carefully and with reason when administering the anesthetic. Be swift but not hasty. In event of difficulty in inserting the needle, don't fret and press; stop, review the situation, reconsider the technique.

Don't forget the patient's comfort. See to it that he is in a position that would be comfortable if he were awake. Often a patient may be disturbed by the lingering sensation that his feet are in a different position than he knows they are. Wait until the anesthesia is effective before putting him in the lithotomy position. Place a folded towel or other support under the back. Many backaches could be prevented by this simple maneuver. The muscles and ligaments of the back may be relaxed and stretched more than they would be with any other form of anesthesia and thereby subjected to unusual strains. Remember also the mental comfort of the patient. Regulate adjuvant agents so that he is mentally reposed, or asleep if necessary.

If aspiration is difficult when the tap is made, or if the desired height of anesthesia is not obtained when the anesthetic agent is introduced, spinal block by a tumor should be suspected. If the agent has already been injected, it should be washed out with normal saline solution. This should be done also if the patient experiences pain after the injection.

Spinal anesthesia administered with care and good judgment is safe and valuable anesthesia, but it is always well to remember Eversole's[2] epigram: "The primary contraindication to spinal anesthesia is the absence of a spinal anesthetist."

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REFERENCES

1. Dripps, R. D.: Personal communication.

2. Eversole, U. H.: Why use spinal anesthesia?, J.A.M.A., 128:257-261, May 26, 1945.

3. Kennedy, F.: The grave spinal cord paralyses caused by spinal anesthesia, S. G. and O., 91:385-389, Oct. 1950.

4. Smolik, E. A., and Nash, F. P.: Lumbar spinal arachnoiditis: A complication of intervertebral disc operation, Annals of Surgery, 133:490-495, April 1951.

Oxygen Therapy

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SUMMARY

Oxygen, properly administered, often is a valuable therapeutic agent in many conditions such as hemorrhage, heart disease, respiratory diseases, anemia, shock, infection with fever and others in which there is direct or indirect interference with normal oxygenation of tissues.

In severe heart disease or acute respiratory conditions, administration of oxygen under pressure may be necessary in order to deliver the required amount to the tissues in want. For conditions in which oxygen want is less critical, 50 per cent concentration of the gas in the inspired atmosphere is effective and more easily carried out.

Patients with chronic heart disease may be greatly helped by taking oxygen at home under the direction of a physician.

OXYGEN is a drug and there are indications for its use and techniques for its administration, but there appears to be no contraindication. Oxygen as it is given clinically has no harmful effects. Although it is possible to produce toxic symptoms experimentally after 18 to 24 hours of continuous administration of 100 per cent oxygen, the problem of the practicing physician is how to get therapeutic concentrations.

INDICATIONS FOR OXYGEN THERAPY

Any situation in which the patient cannot supply adequate tissue oxygenation without the expenditure of energy beyond the ordinary effort of normal respiration constitutes an indication for oxygen therapy. It is apparent that this definition includes a multitude of clinical situations.

To list all the conditions in which oxygen is of benefit to the patient would be extremely time-consuming, but it is worth while to consider at least the classes of pathological states in which oxygen has definite value.

1. Hemorrhagic conditions in which the total quantity of hemoglobin is diminished, resulting in increased respiratory rate and tachycardia—both energy-consuming phenomena.

2. Cyanotic states in which the quantity of blood presented to the lungs does not become saturated, or in which the circulation is so impaired that the circulating blood is excessively desaturated. These conditions may be produced by a variety of clinical conditions such as (a) obstruction of air passages at any point, including an alveolus, (b) paralysis or paresia with a resulting loss of power of the muscles of respiration with a reduction in alveolar dilution, (c) cardiac or circulatory failure, including shock, resulting in a slowing of the circulation.

3. Demand states, which include fever, hyperthyroidism and other conditions in which none of the foregoing conditions exist, but in which the effort required to produce normal content of oxygen in the blood is at an ever-increasing cost in terms of energy expended.

4. Energy-sparing states including cardiac and respiratory conditions in which the patient gets along all right at a reduced level of activity but fatigues rapidly if that level is exceeded. Some patients with valvular heart disease, angina, and coronary disease are examples as are patients with asthma, emphysema, or fibrotic disease of the lungs.

MECHANISM OF ACTION OF OXYGEN THERAPY

It is not difficult to visualize the manner in which increasing the oxygen tension of inspired air is of benefit in conditions wherein the blood in its course through the lungs does not normally become exposed to a sufficiently high oxygen tension to thoroughly oxygenate it, as is the case in cyanotic conditions. When the oxygen content of the inspired air is increased, some of the nitrogen is displaced and the amount of oxygen in relation to the area of the lungs is increased. Thus, in these situations the elimination of carbon dioxide is enhanced by the effect that oxygen has on the dissociation of carbon dioxide from hemoglobin.

Less obvious are the reasons for the value of oxygen therapy in hemorrhagic conditions and in demand states and energy-sparing states. Probably that is why it is too little used in those conditions. For, although the hemoglobin is fully oxygenated as determined by tension studies, the amount of oxygen delivered to the tissues is subnormal. In anemia and other hemorrhagic conditions, even though every available gram of hemoglobin be saturated, there may be too little hemoglobin to carry enough oxygen for normal oxygenation of tissue. In demand and energy-sparing conditions, both oxygen tension and the content of oxygen in the blood may be within normal limits yet the tissues receive less than is needed. In the case of demand states, this is because of the inability of normally saturated blood to supply sufficient oxygen to the tissues without an increase in the rate of circulation of the blood—and to increase the rate would entail increased demand. In the energy-sparing states the reason for deficiency in tissue oxygenation in the presence of normal con-

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tent of oxygen in the blood is that the heart or lungs cannot do more than a limited amount of work without fatigue or failure and the patient spares the heart and lungs by curtailing activity to a comfortable level.

The value of oxygen therapy in these conditions rests in the fact that plasma has the ability of carrying oxygen in a small but significant amount, and the amount is determined by the tension of oxygen in the inspired air. The tension of oxygen in the plasma is, in the final analysis, the important factor in tissue oxygenation, for hemoglobin does not supply oxygen directly to tissues. Hemoglobin gives up oxygen to the plasma in direct proportion to the difference between oxygen tension of the plasma and that of the surrounding tissues: Plasma gives up oxygen to tissue with less oxygen tension, and the oxygen tension of the plasma is replenished from the oxygen carried in hemoglobin. The process is continuous until equilibrium is reached.

It has been observed that the administration of 100 per cent oxygen to non-cyanotic patients for as little as five minutes will increase the oxygen content of the whole blood to 110 per cent of its calculated capacity. The surcharge comes about entirely through an increase in the amount of oxygen in the plasma, which is in direct proportion to the oxygen tension in the inspired atmosphere. Often the increase thus attained makes the difference between hypoxia and adequate oxygenation.

Why oxygen therapy for periods of 15 to 20 minutes two or three times a day is so effective in relieving symptoms in patients with chronic cardiac and respiratory conditions is not clear, but that it is has been demonstrated many times. To illustrate:

A patient with severe mitral stenosis became thoroughly fatigued and mildly dyspneic on effort and could tolerate little activity. When 100 per cent oxygen was given by mask for 20-minute periods three times a day the patient more than doubled the degree of activity without dyspnea or evidence of fatigue. She was able to lie supine without discomfort, although she otherwise slept propped with several pillows. The organic state of the heart was not improved, but the patient was enabled to lead a more useful life.

METHODS OF ADMINISTRATION

The effectiveness of oxygen therapy depends upon the means of administration and the concentration of the gas in the inspired atmosphere. It is frequently desirable to administer 100 per cent oxygen, and in certain circumstances at increased pressure during the inspiratory phase. Therapy of that kind is particularly useful in cases of respiratory obstruction and in some energy-demand states such as acute heart failure or severe shock.

For administration of 100 per cent oxygen at or above atmospheric pressure it is necessary to use a face-fitting mask or other gas-tight mechanism such as an endotracheal tube. The flow of oxygen must be equal to or greater than a patient's minimum respiratory volume. It is, therefore, an expensive technique. There must be a reservoir bag in the system to accommodate the demand for instantaneous flow on inspiration, and this system must have a capacity equal to or larger than the patient's tidal air. Most commercial systems such as those made by Oxygen Equipment Manufacturing Corporation or Bennett-Megee have bags of 750 to 1,000 cc. capacity when they are distended and the gas flow is adjusted so that the bag is not quite collapsed at the end of the inspiratory phase.

Owing to the presence of water vapor and carbon dioxide, even though the inhaled atmosphere is 100 per cent oxygen by volume the maximum concentration that can be delivered to the alveoli is about 90 per cent.

By the use of intermittent positive pressure, the plasma content of oxygen can be made greater than is possible by other means. In this procedure, oxygen is delivered under pressure 5 to 20 cm. (water) more than atmospheric pressure. The technique requires apparatus with special valves, but it is very effective in cases in which not only high oxygen concentration but augmented ventilation is needed—for treatment of patients with carbon monoxide or barbiturate intoxication, for example.

Since it is necessary that close-fitting masks be used in the techniques described, it is important to guard against the possibility of stoppage of the flow of oxygen and to maintain constant supervision.

For the administration of oxygen in concentrations of from 100 per cent to 40 per cent the Oxygen Equipment and Bennett-Megee appliances are equipped with dilution orifices. The orifice is opened enough to supply the desired concentration and the oxygen flow is adjusted to keep the breathing bag properly filled. It is also possible, by special adaptation, to use the intermittent positive pressure apparatus for administration of concentrations of oxygen down to 20 per cent.

A more commonly used technique is the administration of oxygen through a catheter or a loose-fitting face-piece such as a Lombard mask. By such means, more acceptable to the patient and less demanding of supervision, oxygen concentrations of up to 40 per cent in the inspired atmosphere can be obtained. For supportive therapy in conditions such as fever and hyperthyroidism, and in postoperative recovery periods they are generally satisfactory. To supply concentrations of 30 to 40 per cent in the inspired atmosphere, oxygen flow of 7 or 8 liters per minute is necessary for the average adult. If given in lesser quantity, it is essentially wasted; if in greater, the flow of the oxygen may be extremely uncomfortable.

Because rapidly flowing oxygen dries mucous membrane, it should be humidified by passing it through fine orifices in a humidifier before it is administered. It is unwise to give oxygen by nasal catheter in cases in which the patient has suction tubes placed in the nose, for the restlessness that is

caused thereby, due to additional irritation, may in itself increase the oxygen requirements and defeat the purpose.

Oxygen tents have definite value in certain instances, particularly if cooling of the environment of the patient is desired. Supplying oxygen by this means is expensive and usually not satisfactory because of the meticulous attention required and the difficulty of keeping the tent gas-tight. The newer clear plastic hoods that seal about the neck, leaving the patient free to turn or be turned, are more effective for oxygen administration where other techniques are not feasible. With the hoods, the maximum concentration that can be obtained is 50 or 60 per cent.

Administration of oxygen intravenously was recently revived by Cole. The big problem with this technique is to introduce oxygen in bubbles so small that the gas is rapidly absorbed by the blood. Other methods of parenteral administration of oxygen have not been satisfactory.

Except in cases in which oxygen is used regularly two or three times a day, patients given oxygen therapy must be "weaned" ultimately in order that they may live on the amount of oxygen normally in the air. Abruptly discontinuing oxygen administration, and starting it again only if the patient obviously is in critical condition, is not in the best interest of the patient. If oxygen has been given at 100 per cent concentration, the concentration may be diminished and the pulse, respiration and blood pressure carefully observed. If the pulse rate and the respiration rate increase (the blood pressure may or may not decrease), the oxygen tension should be increased and then gradually diminished over a period of hours, with the pulse and respiratory rate as guides. The color of the skin is an unreliable and tardy indication of the condition of the patient. For patients who have been getting oxygen in 40 to 50 per cent concentration, weaning may be accomplished by turning the flow off for ten minutes, then on for ten minutes and gradually shortening the periods of flow until air alone is sufficient.

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REFERENCE

Cole, F.: Intravenous oxygen, Anesthesiology, 12:181-188, March 1951.

Less Commonly Recognized Clinical Features of Amebiasis

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SUMMARY

Among the less commonly recognized clinical manifestations of intestinal and hepatic amebiasis are vague abdominal distress in the absence of diarrhea, symptoms like those of peptic ulcer, and symptoms of a kind that may be ascribed to psychoneurosis. Hepatic amebiasis may be confused with other diseases affecting areas above or below the right diaphragm, such as cholecystitis, viral hepatitis, pneumonia or pleurisy.

Adequate therapy in every case must include a course of a drug effective against hepatic involvement (chloroquine or emetine) and a drug effective against intestinal involvement (Diodoquin, Milibis, or carbarsone). Even in the absence of positive results of stool examinations, a course of antiamebic therapy is always justified as a diagnostic and therapeutic measure.

REPORTS of experience during and after World War II have made physicians in general aware that amebiasis is not exclusively a tropical disease, and most of them consider the disease when a patient complains of diarrhea, particularly if the diarrhea is acute, with discharge of blood. However, since the diagnosis may be missed (or erroneous diagnosis made) if diarrhea is not present to arouse suspicion, awareness of other, less forthright manifestations of amebiasis is important.

The occurrence of diarrhea is by no means a requirement for the diagnosis of amebiasis. Indeed, in chronic amebiasis the bowel movements may be entirely normal, or constipation may be present. It is noteworthy, moreover, that diarrhea may not be recognized as such by a patient unless it is severe. Close questioning is necessary, for to most laymen the word means frequent watery bowel movements. The more characteristic pattern of chronic intestinal amebiasis is the passage of one or more "mushy" stools a day. Not infrequently a war veteran denies having diarrhea, only to admit on further questioning that he passed one normally formed stool a day before military service and one mushy stool daily afterward.

Vague symptoms referable to the gastrointestinal tract, such as indigestion or indefinite abdominal pains, with or without abnormally formed stools, may result from intestinal amebiasis. Not infrequently in cases in which such symptoms are ascribed to psychoneurosis after extensive x-ray studies have been carried out, complete relief is obtained with antiamebic therapy.

Sometimes associated with amebiasis are symptoms like those of peptic ulcer but with no abnormality observable in x-ray studies. Then, after E. histolytica is noted in the stool and antiamebic therapy given, the symptoms of ulcer disappear. The reason for gastric distress as a concomitant of amebiasis is not clear; the phenomenon may be caused by reflex pylorospasm secondary to the colonic involvement.

Differentiating between acute amebiasis and acute appendicitis may be exceedingly difficult. In 85 per cent of cases of amebiasis, the cecum is involved.[4] Amebiasis of the appendix likewise occurs. In some instances, even the observation of E. histolytica in the stool may not rule out appendicitis and the clinical symptoms may be such as to dictate surgical intervention. In such circumstances it is imperative that emetine be given preoperatively. Even if amebiasis is not diagnosed preoperatively, if the surgeon upon opening the abdomen becomes suspicious of amebiasis from examination of the appendix or colon, emetine should be given immediately. Beginning treatment at this stage will prevent or greatly minimize the danger of amebic peritonitis, which often causes death.

Chronic amebiasis may simulate non-specific ulcerative colitis. Furthermore, non-specific ulcerative colitis may follow amebic colitis, in which case eradication of the amebae with proper therapy will not bring about a cure. Although lesions of the two diseases, viewed sigmoidoscopically, usually are distinctive, this is not always the case. It is therefore advisable that every patient with chronic colitis be given antiamebic therapy even though the organisms are not observed in repeated examinations of stools. A brief report of a case will illustrate:

A young woman was examined at an excellent university medical center because of chronic diarrhea. Conditions observed in a sigmoidoscopic examination were consistent with chronic non-specific ulcerative colitis. Repeated stool examinations were negative for ova and parasites. The patient was told she had chronic ulcerative colitis and was discharged. The symptoms persisted and one year later the patient entered another hospital, received a course of antiamebic treatment and was immediately and completely relieved of symptoms. There was no recurrence in a two-year follow-up period.

In some instances following antiamebic therapy, residual symptoms such as mild pain and some frequency of bowel movement continue. Often in such circumstances the patient is overtreated with re-

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peated courses of amebicides and medicated enemata without clinical improvement. It seems logical that residual inflammatory changes (or additional disease such as a bacterial dysentery requiring other therapy) may be present, even after the amebae have been eliminated, and that they cause the symptoms mentioned. Treatment with diet and antispasmodics is indicated.

Allergic manifestations are not commonly mentioned. Eosinophilia is not a feature of amebiasis, and when it does occur is rarely over 15 per cent. In routine physical examination of soldiers with acute amebiasis it was not uncommon to note scattered rhonchi through both lung fields. This occurred in the absence of acute respiratory infection or history of asthma. Rarely was the patient aware of the condition and it abated during antiamebic therapy. In some instances patients who had repeated episodes of angioneurotic edema were not permanently relieved of the symptoms until incidental amebic infestation was diagnosed and treated. Although the foregoing were purely clinical observations, the conditions occurred frequently enough to seem significant.

SIGMOIDOSCOPIC EXAMINATION

In sigmoidoscopic inspection, if amebic disease is present in the rectosigmoid region ulcers of varying size can be seen, with fairly normal mucous membrane between the areas of ulceration. This is in contrast to the usual appearance in non-specific ulcerative colitis wherein the entire mucous membrane is granular, friable and abnormal. However, this differential point is not absolute.

When lesions are noted it is essential to obtain material for microscopic examination. It is practically useless to attempt to get a proper specimen with a cotton swab. Use of an instrument with a dull small curette at the end is advisable, so that the ulcer may be gently scraped and all the material obtained saved for immediate examination.

Amebiasis may be present even though the rectosigmoid region appears to be entirely normal, since the lesions may be elsewhere in the colon.

STOOL EXAMINATIONS

For the highest degree of accuracy in examination of stools, the specimens must be collected properly and examined by well trained and experienced technicians. In examination for the trophozoites, freshly passed stools are essential. Administration of a saline laxative with immediate examination of the resulting diarrheal stools sometimes facilitates diagnosis. Specimens of formed stools are satisfactory for use in search for cysts, but the diagnosis should not be made on the basis of an unstained preparation alone. It is always wise to verify suspicious cysts with an iron-hematoxylin stain. With the development of good preservative material it is now possible to send specimens by mail to laboratories which are equipped to carry out these procedures.

Since the finding of the amebae can be so difficult, no examination should be considered complete until six to nine specimens have been examined.

COMPLICATIONS

Intestinal. Severe bleeding and perforation are very rare complications of intestinal amebiasis. Chronic ulcerative colitis and the "irritable colon" syndrome were previously discussed.

Hepatic. This is the most common complication. On routine physical examination of soldiers with acute amebiasis, in about 20 per cent of cases enlargement and tenderness of the liver were noted. The condition abated when antiamebic therapy was carried out.

Sixty to 90 per cent of patients with hepatic amebiasis have a history of diarrhea. In 60 to 75 per cent of cases the organism is noted in the stools. Therefore, neither the absence of a history of diarrhea nor the absence of E. histolytica in the stools excludes the diagnosis. The term "hepatitis" is actually a misnomer since there is not a diffuse inflammatory process throughout the liver, but localized areas of involvement. Likewise the term "abscess" is incorrect inasmuch as the involved area, unless secondarily infected, does not contain pus, but merely necrotic and autolyzed liver tissue.

The characteristic clinical features are chills, fever, and pain and tenderness in the right upper quadrant of the abdomen and in the lower part of the chest on the right side. Frequently observed in fluoroscopic examination of the chest are elevation, deformity and splinting of the right diaphragm. Jaundice other than of a very mild degree is rare. From this typical form there are all gradations to entirely asymptomatic cases. In epidemic areas hepatic lesions not infrequently are noted at autopsy in cases in which there was no clinical evidence of disease of the liver. The disease may be manifest in morbid process above the diaphragm on the right side. One such case was that of a soldier who was admitted to an overseas general hospital after an illness of one week characterized by chills, fever and pain low in the chest on the right side. Upon examination pleural effusion on the right side was noted, and aspirated material contained many lymphocytes. Low grade fever continued and the diagnosis was tuberculous pleural effusion until the patient's field medical records arrived and it was noted in them that earlier the liver had been palpable and tender. E. histolytica then were observed in the stool. Antiamebic therapy resulted in immediate disappearance of all signs and symptoms.

Another patient who had been hospitalized for dental extractions at another excellent medical installation was transferred for treatment of "arthritis" of the right shoulder. Careful questioning and examination elicited that pain in the right shoulder was referred from the right side of the diaphragm, which was elevated and splinted. E. histolytica were present in the stools. Following antiamebic therapy the "arthritis" abated.

Differentiating between acute gallbladder disease and acute hepatic amebiasis may be exceedingly difficult. X-ray studies of the gallbladder and a diagnostic trial of antiamebic therapy may be nec-

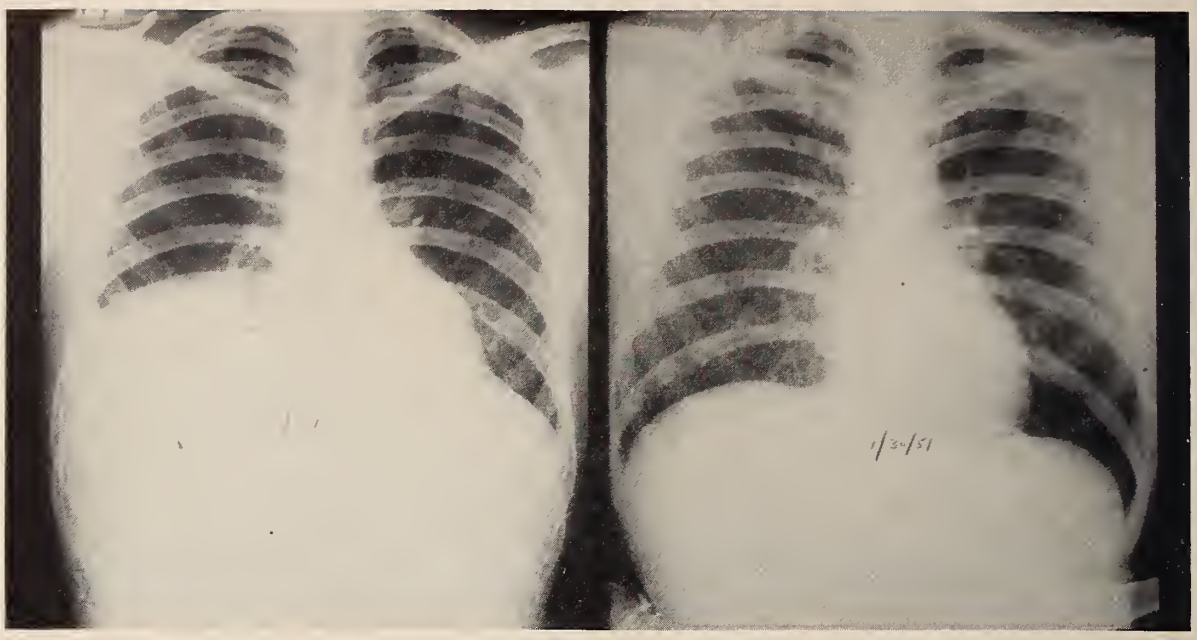

Figure 1.—*Left*—Chest roentgenogram taken before treatment. *Right*—18 days later: return of right diaphragm to normal position with clearing of the neighborhood reaction at the right lung base.

essary to differentiate the two conditions. To illustrate: A 25-year-old male was admitted to hospital with complaints of chills, fever, and pain in the right upper quadrant of the abdomen. There was pronounced tenderness in the painful quadrant of the abdomen and in the rib cage low on the right side. The patient gave a history of diarrhea while serving in the armed forces. E. histolytica were observed in the stools. Antiamebic treatment was carried out and all symptoms disappeared within a few days. X-ray studies of the gallbladder were not done. The patient returned several months later with identical complaints. The gallbladder could not be visualized by x-ray and the diagnosis of cholecystitis and cholelithiasis was proved at operation.

An amebic liver "abscess" may rupture spontaneously. Fortunately, in most cases rupture is into a bronchus, but rupture into any neighboring body cavity or organ may occur.

TREATMENT

Since hepatic involvement is common in amebiasis and since this feature may not be clinically apparent, it is essential that each patient be treated with drugs which will eradicate both the intestinal and the hepatic foci.

Emetine. Until recently emetine was the only drug which was of value in the treatment of hepatic amebiasis. The dangers of this drug have been tremendously exaggerated. However, to minimize the possible toxic effects of this drug it is necessary to keep the patient at rest in bed. In recent years chloroquine has been shown to be very efficacious in liver disease and since this drug is practically non-toxic and does not require restriction of the patient's activity, it is now the drug of choice. Thus emetine is limited to use, preoperatively and postoperatively, in cases in which the patient cannot take medication orally, and in the rare cases of amebic granuloma of another site. The usual dose of emetine is 0.065 gm. parenterally each day for six to ten days depending on the size of the patient and the severity of the disease. In cases of definite amebic "abscess" of the liver, it will usually be necessary to give a second course of emetine (if chloroquine is not used) after a short rest period. While this therapy is being given, the patient is kept at rest and carefully observed as to blood pressure, pulse rate and evidence of peripheral nerve involvement. Some change may be noted in electrocardiograms, but this will rarely be of significance in the absence of clinical evidence of toxicity when the drug is used as outlined above.

Chloroquine. The effectiveness of this drug in hepatic amebiasis is based on its extensive localization in the liver[2] (some 500 times its plasma concentration). The usual dosage is 0.5 gm. twice daily for three days following 0.25 gm. twice daily for a total of two weeks. (See Figures 1 and 2.)

Intestinal drugs. Since neither emetine nor chloroquine is highly effective in the treatment of intestinal amebiasis, it is imperative that other medications which will eradicate the primary intestinal focus be given. The effective drugs in this group are the iodo-hydroxyquinolines (Diodoquin,® vioform and chiniofon), carbarsone and Milibis.® The author's experience has been mainly with Diodoquin and it has been found to be an exceedingly efficacious drug with practically no toxicity. The usual dose of Diodoquin is three tablets (0.63 gm.) three times daily for three weeks.

Antibiotics. In recent years there have been some favorable reports on the use of aureomycin in the

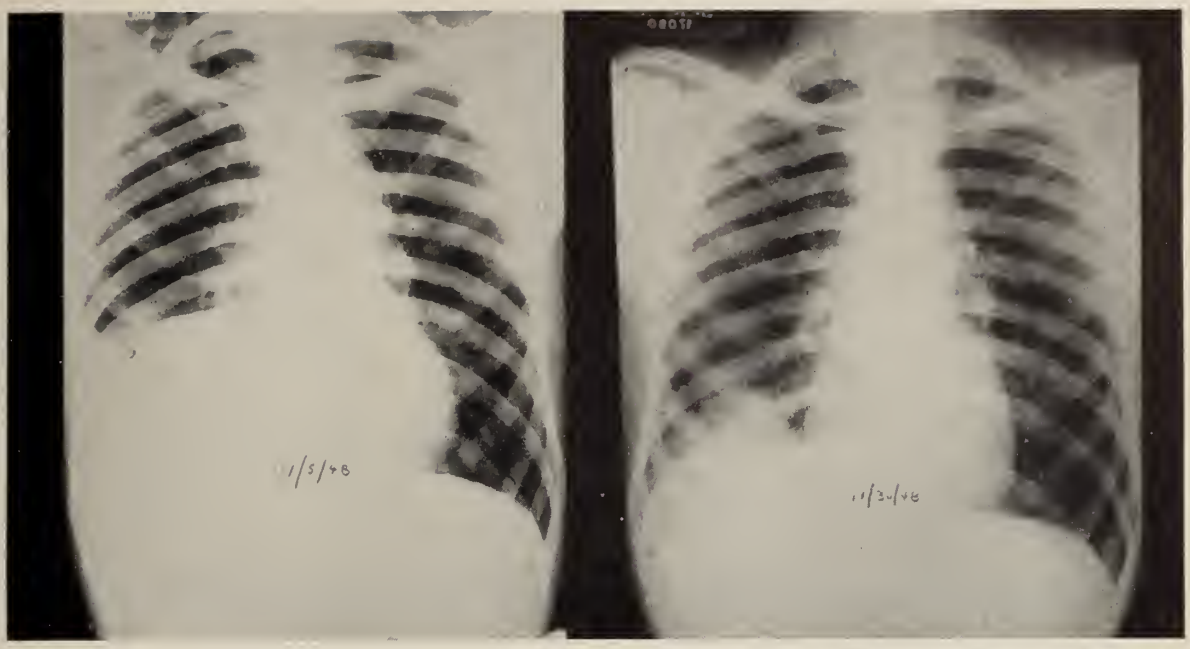

Figure 2.—*Left*—Roentgenogram before therapy in which it was noted that right diaphragm was elevated and splinted, with some reaction at the base of the right lung. *Right*—25 days later: considerable improvement but not complete return to normal.

treatment of amebiasis. However, experimental studies on monkeys[1] and one recent clinical report in the treatment of 25 patients,[3] very strongly question the value of this drug as an amebicide. Until there is further evidence in its favor and since more certain drugs are available, aureomycin should not be relied upon as the sole agent in the treatment of amebiasis.

Thus, from the standpoint of effectiveness, lack of toxicity and lack of necessity for restricting the activity of the patient, a course of chloroquine for two weeks and a course of Diodoquin for three weeks (or one of the other effective intestinal drugs) is the treatment of choice in amebiasis.

Drainage of liver "abscess." In many instances of long standing and large amebic "abscesses," conservative treatment alone will not cure the patient. Removal of the necrotic material becomes necessary. The method of choice is closed needle aspiration, with local anesthesia. The site for puncture is the most tender point in the right intercostal spaces, which will usually be the eighth or ninth right intercostal space in the anterior or mid-axillary line. In all instances, unless aspiration seems imperative as an emergency procedure, it should not be done until the patient has received chloroquine or emetine for several days to prevent the spread of amebae into the pleura or peritoneum. Open surgical drainage results in a tremendously higher mortality rate and should be used only if there are secondarily infected abscesses which do not respond to antiamebic therapy, antibiotics and closed aspiration.

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REFERENCES

1. Anderson, H., and Anderson, J.: Antibiotics against amebiasis in Macacques, Am. J. Trop. Med., 30:193, Dec. 1950.

2. Conan, N. J.: The treatment of hepatic amebiasis with chloroquine, Am. J. Med., 6:309-320, March 1949.

3. McHardy, G.: Aureomycin in the treatment of amebiasis, Gastroenterology, 17:113, Jan. 1951.

4. Napier, L. E.: The Principles and Practice of Tropical Medicine, The Macmillan Co., 1946.

Planned Resection of the Regional Lymph Nodes in Pneumonectomy for Carcinoma

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SUMMARY

Although there has been a reluctance to include the regional lymph nodes in pneumonectomy for cancer because of the supposed inaccessibility of the nodes, radical removal of the nodes within the thorax is a feasible procedure.

Failure to include the regional nodes in pneumonectomy for cancer violates the accepted principle of inclusion of the regional lymphatics in operations for cancer. If pneumonectomy is indicated for removal of a malignant lesion, then removal of the regional nodes is also indicated. Injection of a dye helps the surgeon in identification of lymphatics to be excised.

IMPROVED anesthesia, perfected techniques and the introduction of antibiotic therapy have made pneumonectomy for carcinoma of the lung a relatively safe procedure. However, one important phase of the treatment which remains undeveloped is the inclusion of the regional lymph nodes as a part of the operation. The principle of inclusion of adjacent nodes is recognized as an essential part of well planned operations for dealing with cancerous lesions elsewhere, notably in the breast, the colon, the stomach, the uterus and the thyroid gland. While it is generally recognized that this principle is equally important in dealing with cancer in the lungs, it has been considered impracticable to extend resection beyond the immediate confines of the root of the lung because of the supposed inaccessibility of the more distant but equally important nodes in the mediastinum.

The close inter-relationship between the lung and regional lymph nodes is conspicuously evident in the early extension of the disease along the lymphatic pathways. Occasionally, even in cases in which the patient died of the disease, the spread is observed to be confined to the lung and its lymphatic communications within the thorax.

While the surgical mortality in connection with pneumonectomy for cancer has greatly decreased over the past few years, the average time of survival following resection has not improved proportionately. The explanation may lie in the fact that the regional lymph nodes have not been included in the resection. In 1950, Churchill and associates[1] reported upon a number of cases in which lobectomy was done for removal of malignant lesions because it was considered that the patients would not withstand pneumonectomy. The survival time was comparable to that obtained by pneumonectomy. There are several possible explanations for this, but the author believes it should be interpreted as a weakness in methods of performing pneumonectomy rather than as a favorable commentary on lobectomy. As long as the treatment of carcinoma of the lung remains surgical, there will be indications for lobectomy; but if cancer is to be dealt with in a logical manner, this limited operation should be performed only on functionally handicapped patients who cannot withstand the more extensive procedure of radical pneumonectomy with the inclusion of the regional lymph nodes. In this respect it is noteworthy that practically all of the progress in recent years in treatment of cancer of the breast has been through more extensive removal of lymph nodes, even in the region of the neck and intercostal spaces. Exactly the same principle of wide excision applies in performing curative operations for bronchiogenic carcinoma. To advocate removal of only the hilar nodes is to offer "lip service" to lymphatic resection, and if the longevity records following operation for cancer in other regions are indicative, no improvement in the statistics of longevity following pneumonectomy may be expected until the lymphatic resection has been made to extend well beyond the region of the hilum.

The failure to include the lymph nodes and lymph vessels beyond the hilum has been due chiefly to a lack of familiarity with the surgical anatomy of the mediastinum. It has been generally held that extension of the dissection into the spaces between the trachea and its adjacent structures such as the superior vena cava, the aorta and the esophagus, would invite such great hazards that attempts in this direction would be unwise. This is an erroneous concept. The removal of the more distant lymph nodes with their associated areolar tissue not only is feasible but actually simplifies the removal of the lung by clearly exposing the main blood vessels of the pulmonary root, thus making it easier to ligate and divide them.

At the Long Beach Veterans Administration Hospital a study of the lymphatic channels of the thorax has been carried on for the past two and a half

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years. This study is the outgrowth of investigations with staining of the lymph nodes of the thorax during operation. One phase of the study was concerned with the mapping of the regional nodes according to the specific areas of the lung with which they communicate. When a dye was injected into certain areas of the lungs, the associated nodes became stained by the uptake of the dye. It was noted that in most cases the upper part of the right upper lobe drained lymph to the azygos, hilar, and right paratracheal nodes; and the lower portion of the right lung drained to the subcorynal and hilar nodes. The upper portion of the left upper lobe drained chiefly to the nodes within the window of the aortic arch, and also to the hilar and paratracheal nodes. The midportion of the lung, including the lingula, drained chiefly to the hilar, paratracheal and subcorynal nodes; while the lower portion of the lung drained chiefly to the subcorynal, and hilar nodes. There was also uptake of the dye by the more distant nodes either directly or through the mediation of the nodes near the root of the lung. The pathways corresponded with those previously described by Rouviere[2] and by Delamere and associates[3] in their complete and detailed monographs on the lymphatics in man.

In the course of the study it became evident that the various groups of nodes within the thorax which commonly receive metastases from the involved lung may be safely removed together with the lung during the operation of radical pneumonectomy. Furthermore, it was found that in most cases it was possible to remove the nodes en bloc with the lung, thus fulfilling one of the important requirements for ideal surgical treatment for cancer. As would be expected, the additional steps required for the extensive resection of the lymph nodes extended the time of operation, usually by an hour or an hour and a half, but this did not affect postoperative convalescence.

The method devised by the author for identification of regional nodes during operation has been previously described,[4] and the details of the procedure for staining the regional nodes of the lung will be published elsewhere.[5] Therefore, only a brief description of the method of vital staining will be given here. Pontamine® sky blue in 4 per cent aqueous solution is mixed with hyaluronidase (Wydase,® 6 units per cc.). Four or five cubic centimeters of the mixture is injected into the pedicle of the lung at the beginning of the operation, and within a few minutes the dye reaches the regional lymph nodes, imparting to them a blue color which differentiates them from the surrounding tissues. While uptake of the dye occurs without the aid of hyaluronidase, the staining of the nodes is more rapid, more intensive and more extensive if this agent is added. With the visual aid of the vital staining, a surgeon is less likely to overlook nodes which might otherwise remain obscured because of small size or resemblance to surrounding tissues.

While the procedure of vital staining is helpful, it is not essential for the performance of meticulous removal of the lymphatics which should be included

Figure 1.—Right anterior view of anatomical specimen including mediastinal structures and portion of right lung, with regional lymph nodes. *A*—right pulmonary artery; *V, V*—superior and inferior pulmonary veins. Only a part of the regional nodes are shown in this view. Attention is directed to the Group 5 nodes which lie between the superior vena cava anteriorly, the right pulmonary artery and trachea posteriorly and the arch of the aorta medially. The superior vena cava has been displaced to the left to reveal this group of nodes.

in the resection. Removal of the nodes and areolar tissue en bloc averts the possibility of skipping an area. The surgeon has the advantage, in the thorax, of dealing with nodes which are already pigmented by anthracosis, and while this is not an infallible aid, it does reveal many of the nodes.

While the normal direction of flow of lymph from the various segments of the lungs has been completely described,[2,3] and the description has been confirmed by the author's studies with vital staining, this knowledge is not particularly applicable in performing the operation of radical pneumonectomy. As the direction of flow is so frequently altered by various influences such as inflammatory blocking by anthracotic particles and particularly by obstruction of normal pathways by malignant cells, it is important that all regional nodes be removed in each case in which pneumonectomy is per-

Figure 2.—Left anterior view reveals the aortic window formed by the arch of the aorta and the left pulmonary artery (*A*). The ligamentum arteriosum (*11*) forms a barrier to the approach to the nodes within the "window." Its division between ligatures facilitates the thorough removal of the important group of nodes within the space.

formed with the object of curing the patient. To do less would be as illogical as to remove only the lymph nodes associated with the segment in which the lesion occurs when operating for cancer of the breast.

The general plan of radical pneumonectomy which was developed as a result of the previously mentioned studies is to begin with resection of the lymph nodes along the innominate veins and their tributaries at the cupula of the parietal pleura and carry the dissection in continuity toward the pulmonary root, including the nodes along the subclavian vein and the innominate vein, the paratracheal and anterior mediastinal nodes, and, on the right side, the para-azygos nodes. The dissection differs in the right and left hemithoraces because of anatomical differences, the superior vena cava altering the procedure on the right side, and the aortic window requiring special consideration on the left side (Figures 1 and 2). The dissection from the diaphragm toward the hilum is essentially the same for the two sides.

It has been argued with some justification that over-zealousness in extending the resection in the treatment of carcinoma should be guarded against, lest the patient be so handicapped by the radical dissection that the resulting infirmity be worse than the original disease. The criticism is not a valid one, however, with regard to inclusion of the regional lymphatics in pulmonary resection. The chief handicap which may be induced by pneumonectomy is pulmonary insufficiency. The only hazard which may arise from inclusion of the lymphatics is the immediate hazard of injury to vital structures during the dissection. The chief considerations in determining whether or not radical pneumonectomy should be performed are whether the cancer is sufficiently limited to justify resection, and whether or not the patient will be able to tolerate the removal of the lung.

If pneumonectomy is indicated, then the inclusion of the regional lymphatics is also indicated. Pneumonectomy with the inclusion of lymph nodes has been carried out by the author in 18 patients over the past two and a half years. It is too early to evaluate the procedure in terms of longevity. However, it is believed that this is a rational step in that it applies the same principles in dealing with the lymphatics in this situation as are applied in the treatment of carcinoma in other situations.

REFERENCES

1. Churchill, E. D., Sweet, R. H., Scutter, L., and Scannell, J. G.: The surgical management of carcinoma of the lung, J. Thoracic Surg., 20:349-358, 1950.

2. Rouviere, H.: Anatomy of the Human Lymphatic System, Edwards Bros., Ann Arbor, 1938.

3. Delamere, G., Poirier, P., and Cuneo, B.: The Lymphatics, Constable and Co., London, 1913.

4. Weinberg, J. A., and Greaney, E. M.: Identification of regional lymph nodes by means of a vital staining dye during surgery of gastric cancer, Surg., Gynec. and Obstet., 90:561-567, 1950.

5. Weinberg, J. A.: Identification of Regional Lymph Nodes in the Treatment of Bronchiogenic Carcinoma. To be published.

Pulmonary Resection in Tuberculosis

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SUMMARY

Newer surgical and anesthetic techniques and the use of streptomycin and para-aminosalicylic acid (PAS) have made possible increased success in pulmonary resection for tuberculosis. Especially in early cases, however, bed rest and pneumothorax or pneumoperitoneum should be given adequate trial before resection is decided upon. In all cases a thorough bronchoscopic examination should be made first and the findings carefully evaluated.

Pulmonary resection may be advisable for lesions of certain kinds which do not respond well to thoracotomy; for lesions which have not responded to trial of other methods; for a lung destroyed by tuberculosis; and in cases of active disease in an unexpanded lung.

The experience of the author and of others emphasizes the importance of correct postoperative care. Since tuberculosis is rarely limited to the resected area, at least six months' rest in bed under medical supervision is necessary to permit cure of residual disease. Streptomycin with PAS is particularly valuable in the postoperative period; therefore indiscriminate use of it in earlier treatment should be avoided lest resistance develop.

THE tremendous advance in thoracic surgery in the past 15 years has opened new approaches to the control of tuberculosis. The improved technique of individual ligation and hilar dissection, together with the strides in anesthesia, blood replacement methods and by no means least the advent of the antibiotics gave thoracic surgeons confidence in development of effective excision of pathogenically involved segments of the lungs. This was first demonstrated in the successful handling of non-tuberculous conditions, with reduction in morbidity and mortality to a respectable figure. Phthisiologists readily admit that permanent collapse therapy, while effective in the arrest of active tuberculosis in a large percentage of cases, is objectionable because it entails multiple operations, permanent deformity of the chest, and in many cases, pulmonary suppuration due to compression of the diseased lung. It was, therefore, reasonable for surgeons interested in thoracic disease to consider excision of the local lesion as a means not only to circumvent the objectionable features of thoracoplasty but to provide a better chance for complete cure.

The first pulmonary resections for tuberculosis appeared extremely successful and improvement was noted in x-ray films. Unfortunately, early ambulation was permitted in many instances and the preliminary encouragement was followed by despair when new or reactivated lesions appeared in the remaining lung several months after operation. This unfortunate turn of events brought about a reevaluation of the entire problem, and the literature soon was flooded with reports from reliable sources regarding the role and effect of resection in the treatment of pulmonary tuberculosis. As a result of this intensive study by so many careful and qualified observers, there have been periodic episodes of enthusiasm as well as pessimistic forecast with regard to the radical surgical approach to what has been commonly interpreted as a generalized rather than a localized disease. Against this vacillating background, the present discussion must of necessity be influenced by the experiences of other surgeons as well as those of the author.

EARLY EXPERIENCE

During the years 1945 and 1946, the author, then in army service, was located at Fitzsimons General Hospital, near Denver. In a period of 12 months 30 patients with tuberculosis were subjected to pulmonary resection. Immediately following operation there was one death and three cases in which the disease spread. Rest in bed was not insisted upon following operation, and nine months later two of the remaining 29 patients died of tuberculosis and there was spread of the disease in seven additional cases. Postoperative pleural suppuration was not a problem. Careful investigation brought out three main facts which were felt to be responsible for the poor results. First, the case selection was not good. Many of the patients had bilateral disease, and lobectomy was performed with the idea of removing the "feeder" cavity. At operation in the majority of such cases, extensive active disease was found in the adjoining lung and the excision of the larger cavity was not effective. Second, overdistention of the remaining lobe or lobes following resection frequently brought about activation of lesions felt to be dormant at the time of operation. Third, it was believed that ambulation was permitted too soon after operation. Reports of excellent progress of patients who were ambulatory soon after lobar resection for diseases other than tuberculosis were so impressive that the premise generally accepted as fundamental, that tuberculosis is rarely, if ever, a localized dis-

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ease, was overlooked. It has since become apparent that the entire disease is seldom removed by eradication of a single focus and that the residual tuberculosis should be treated by a strict medical supervisory program including a minimum period of six months of rest in bed.

Other investigators reported similarly unsatisfactory early experiences, but with the advent of streptomycin in late 1946, enthusiasm for resection in tuberculosis was renewed. Since then it has been observed that the hazards of postoperative infection, spread, and complicating fistulae are greatly reduced with the use of streptomycin alone, and even more so when para-aminosalicylic acid (PAS) and streptomycin are used in combination. Jones[5] convincingly demonstrated that the results of resection in patients in whom the organisms are streptomycin-sensitive are far superior to the results when the bacilli are resistant to the drug. It is, therefore, extremely important that streptomycin not be given indiscriminately lest resistance develop and make the drug ineffective in event it is needed later in connection with resection.

SELECTION OF PATIENTS FOR RESECTION

General considerations before resection should include the age of the patient, the duration of the disease, the status of the bronchial system and the anatomical location of lesions.

Age of the patient. Young persons withstand major operations of any kind much better than older patients, and this is a point of major concern in resection for tuberculosis. Patients more than 60 years of age with cavitary disease are certainly less desirable candidates for resection than are patients 20 to 30 years younger.

Duration of disease. Experience to date indicates that pulmonary resection should not, as a rule, be recommended in the treatment of patients with early primary lesions. Rest in bed and reversible collapse methods such as pneumothorax and pneumoperitoneum should certainly be given adequate trial. On the other hand, a five-year course of these methods without definite progress in cavity collapse would indicate the use of a more radical approach. For this reason close liaison between medical and surgical consultants is of the utmost importance.

Status of the bronchial system. Any patient being considered for resection should have a careful bronchoscopic investigation. Acute ulcerative tuberculous bronchitis of the main bronchial tree makes resection inadvisable. On the other hand, the presence of a stenosing lesion of the bronchus leading to the diseased lung often facilitates the surgical bronchial closure. The status of the bronchial lumen is likewise of importance in determining whether or not pneumonectomy or lobectomy should be done.

Anatomical location of lesions. For many years thoracoplasty has been a relatively effective means of collapse of tuberculous pulmonary cavities. In some situations, however, the removal of rib segments does bring about adequate collapse or, if collapse is ultimately achieved, it is accomplished by multiple procedures entailing pronounced decrease in pulmonary function. Resection should be considered if the lesions are of a kind frequently not amenable to thoracoplasty—giant tension cavities, excavation in the lower lobes, and lesions in the right middle lobe or in the anterior segments of the upper lobes.

TABLE 1.—*Results 15 to 27 months after operation in 26 cases in which either lobectomy or pneumonectomy, with thoracoplasty, was done.*

	No. cases	Sputum negative for tubercle bacilli	Contralateral spread	Empyema	Deaths
Lobectomy with thoracoplasty	17	15	1	....	1*
Pneumonectomy with thoracoplasty	9	8§	....	2†	1‡

*Death occurred first postoperative day due to unattended bronchial plug. †Drainage was carried out and condition abated. §Six patients home and working. ‡Death caused by progressive disease in opposite lung.

TABLE 2.—*Results in 55 cases in which lobectomy or pneumonectomy, with thoracoplasty, was carried out.*

Lobectomy	Pneumonectomy	Sputum negative for bacilli	Deaths
40	15	50	2

In addition to the above general considerations, the more commonly accepted specific indications for the operation should be mentioned. There seems to be little argument that persistence of disease in spite of technically adequate thoracoplasty is sound reason for considering resection. It is also reasonable to assume that in cases in which the lung is destroyed by tuberculosis, measures less radical than total resection are not likely to be effective. When there is active disease in an unexpanded lung, with the threat of empyema ever present, the problem most frequently is solved by thoracotomy, decortication and, occasionally, simultaneous resection.

SURGICAL TECHNIQUES IN RESECTION FOR TUBERCULOSIS

Within the past three years several technical variations in procedures for resection in tuberculosis have been introduced. Most of them have been aimed at conserving pulmonary function, avoiding postoperative infection, and preventing overdistention of the remaining lung tissue following lobectomy. Gebauer[3] and Chamberlain[1, 2] directed attention to the saving of pulmonary reserve. Gebauer has successfully removed stenosed segments of the bronchi and salvaged the rest of the lung. Chamberlain used segmental resection to good advantage in removing the principal lesion in 100 consecutive cases, with a mortality rate of 3 per cent. The extrapleural approach to pulmonary resection as first advocated by Sarot[7] has many supporters who believe that by this means more thorough excision of diseased tissue can be accomplished and the incidence of complicating postoperative infections reduced.

In 1945 Iverson and Skinner[4] described removal of an upper lobe or of an entire lung, with thoracoplasty carried out at the same time to fill the space and thus avert overdistention of the remaining portion of the lung or of the opposite lung. Samson, Dugan, and Harper[6] in 1950 made a preliminary report on results in 26 cases in which the method was used; and since that time 29 additional patients have been treated by this means, making a total of 55 in the series. Results in the first series of 26 cases and the combined series of 55 are given in Tables 1 and 2.

In all 55 cases the fifth rib was removed in opening the chest for resection. Following the resection, ribs four, three and two were removed and the pleura was separated from the undersurface of the first rib, leaving the entire top rib intact. Tube drainage of the pleura was carried out after lobectomy, but in no instance for more than three days.

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REFERENCES

1. Chamberlain, J. M., and Ryan, T. C.: Segmental resection in pulmonary disease, J. Thor. Surg., 19:199, Feb. 1950.

2. Chamberlain, J. M., and Klopstock, R.: Further experience with segmental resection in pulmonary tuberculosis, J. Thor. Surg., 20:843, Dec. 1950.

3. Gebauer, P. W.: Plastic reconstruction of tuberculous bronchostenosis with dermal grafts, J. Thor. Surg., 19:604, April 1950.

4. Iverson, R. K., and Skinner, H. L.: Pneumonectomy followed by immediate thoracoplasty, Public Health Reports, 64:140, Feb. 1949.

5. Jones, J. C., and Robinson, J. L.: Pulmonary resection in tuberculosis: Its hazards, indications and results, J. Thor. Surg., 20:882, Dec. 1950.

6. Samson, P. C., Dugan, D. J., and Harper, H. P.: Upper lobe lobectomy and concomitant thoracoplasty in pulmonary tuberculosis—a preliminary report, California Medicine, 73: 547, Dec. 1950.

7. Sarot, I. A.: Extrapleural pneumonectomy and pleurectomy in pulmonary tuberculosis, Thorax, 4:173, Dec. 1949.

Hirschsprung's Disease and Congenital Megacolon

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SUMMARY

Hirschsprung's disease and congenital megacolon are recognized as separate entities. They differ one from another in clinical, roentgenographic and histologic features.

Conservative treatment of patients with Hirschsprung's disease is ineffective; surgical therapy with a new technique is beneficial. In congenital megacolon, operation is futile and may be harmful, whereas patients may be benefited by conservative measures, and improvement may occur spontaneously after adolescence.

SINCE 1886, when Hirschsprung described congenital dilatation and hypertrophy of the colon, there have been numerous theories concerning pathogenesis.[8, 9, 12, 13, 17] It has been generally accepted since 1907 that some kind of neurogenic disorder is responsible. Several methods of treatment have been used, none of them uniformly successful. Up to 1927, patients who did not respond to catharsis, enema, and special diet were subjected to partial or complete colectomy, a procedure which was gradually discarded because of the high mortality and the development of dilation of the bowel proximal to the site of anastomosis.[5, 10, 11, 21, 26] Lumbar sympathectomy, introduced in 1927,[24] also has fallen into disfavor because of debatable clinical results. the apparent destruction of pathways of visceral sensation, and the occasional occurrence of sterility in males.[1, 10, 11, 16, 18, 22] The introduction. in 1938, of parasympathetic paralysant and parasympathomimetic drugs such as Syntropan® and Mecholyl® bromide, considerably aided in the medical management of patients with the disease.[14, 15] The few sporadic reports appearing in the literature since 1920 of cases of Hirschsprung's disease in which there was an absence of Auerbach's myenteric plexus distal to the dilated bowel (the condition was compared to achalasia of the esophagus)[4, 7, 23] received little attention until 1948, when relatively large series of cases were studied and a new surgical procedure was devised.[3, 20, 21, 25, 27] Denny-Brown and Robertson[6] observed in experimental studies, and in patients with destructive lesions of the cord and autonomic nerve supply to the lower bowel, that the act of defecation is an automatic or reflex action mediated by Auerbach's plexus. Adequate stimulus is tension on the wall of the rectum, and possibly the lower sigmoid colon, causing contraction of the rectum and reciprocal relaxation of the sphincter ani. The sympathetic and parasympathetic nerve supplies can both be destroyed without completely inhibiting this mechanism.

For many years it has been recognized that the clinical and roentgenologic features associated with congenital dilatation and hypertrophy of the colon are not the same in all cases and that the response to treatment is not uniform. There is now a tendency to divide the cases into two groups, one designated specifically as Hirschsprung's disease, the other as congenital megacolon.[3] Characteristic of the former, which has been most thoroughly studied recently, are a history of severe constipation from birth, with frequent episodes of abdominal pain, and vomiting. The stools are small, hard pellets. The abdomen is huge, and in many cases waves of peristaltic action and outlines of loops of bowel are visible through the abdominal wall. When rectal examination is carried out, the sphincter is noted to be normal and the ampulla empty. In roentgen studies with barium enema, the rectum and distal sigmoid colon are observed to be normal or narrow and irregular and the proximal sigmoid colon abruptly dilated. Complete absence of Auerbach's plexus in the narrowed portion has been reported observed in histologic examination.[21, 25] Patients with Hirschsprung's disease do not respond well to medical treatment, but may be cured by a new surgical procedure in which the narrowed portion of the sigmoid colon and rectum is resected and the dilated colon anastomosed as near the anus as possible, with preservation of the internal sphincter ani.[2, 19]

The operation was done upon five patients at Children's Hospital, Los Angeles. Four of them were improved.

REPORT OF A CASE

A white girl seven months of age was first admitted in 1944. There had been no bowel movement for six days. History: Delivery was normal. No meconium was passed during the first four days of life. Thereafter the patient was chronically constipated with frequent periods of several days between bowel movements, despite use of laxatives, enemas, and suppositories. Feeding and development were normal. There was one normal older sibling.

The patient was fairly well nourished and developed. The abdomen was distended and a hard mass was palpated in the pelvis. Outlines of intestinal pattern were observed at times. The anal sphincter was normal, and a fecolith, which numerous enemas failed to remove, was felt high in the rectum. At laparotomy the colon was observed to be dilated, there was no constriction, and the fecolith was crushed.

In 1947, the patient was referred to the hospital for sympathectomy, but the operation was not carried out. During the

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Figure 1.—Case 1: Barium enema before operation. In the posterior-anterior view the redundant sigmoid obscures the narrow rectum and distal sigmoid, which are clearly seen in the lateral view.

three and one-half year interval there had been almost no spontaneous bowel movements, the stools were small and hard, and the abdomen had been constantly enlarged. There were frequent episodes of vomiting. The child, then four years of age, was small and undernourished, with a tremendously distended abdomen. Bowel loops and peristalsis were visible on the abdominal wall. The anal sphincter was normal and the rectal ampulla empty. In roentgen examination with a barium enema the rectum and distal sigmoid colon were observed to be normal and the proximal sigmoid colon abruptly dilated (Figure 1). Very little of the barium suspension was evacuated.

During the next two years the constipation was partially relieved by the use of Mecholyl® and Zymenol.® There were, however, numerous episodes of great distention and vomiting, necessitating hospitalization on one occasion. In July, 1949, proctosigmoidectomy of the Swenson type was performed. No special studies were made of the section of bowel removed. Following the operation there was a slight stricture at the site of anastomosis which necessitated dilatation. Two months later intestinal obstruction caused by adhesions of the small bowel and herniation of several loops of small bowel through the operative site was relieved surgically. A year after the operation there was no constipation, and the abdomen was flat. In a barium enema study (Figure 2) the colon was observed to be only slightly larger than average and it emptied normally.

The case reported is representative of the new concept of Hirschsprung's disease, characterized by a neurogenic obstruction due to agenesis of Auerbach's plexus in the rectosigmoid area, which can be diagnosed clinically and by roentgen examination, and can be cured by a new surgical technique.

CONGENITAL MEGACOLON

In the disease now specifically designated congenital megacolon, the clinical and roentgenologic manifestations differ somewhat from those of Hirschsprung's disease, and the therapeutic approach is different. As in Hirschsprung's disease, there is constipation from birth, but the stool is large in diameter and often hard and blood-streaked. Bowel movements are difficult and painful, and intestinal colic, often precipitated by the administration of purgatives, is frequent. There is moderate abdominal distention, and palpable fecal masses are present in many cases. The rectal sphincter is normal, the anal canal short, and the rectal ampulla full of feces. In roentgenologic examination with barium enema the rectum and the pelvic colon are observed to be dilated and there is a varying amount of enlargement of the rest of the colon. For the most part, patients respond well to medical treatment, and may improve spontaneously after adolescence. The pathogenesis is unknown.

The following is an example of this kind of congenital dilation and hypertrophy of the colon:

CASE REPORT

A six-month-old white male was first observed in 1948 with complaint of recurrent cyanosis, especially noticeable while he was straining at stool. The baby had been blue at birth. Obstinate constipation and a large abdomen had been present since birth. Stools were usually large and hard, necessitating frequent use of laxatives and enemas. There

Figure 2.—Case 1: Barium enema one year after operation, showing the almost normal appearance of the colon when filled and the normal evacuation.

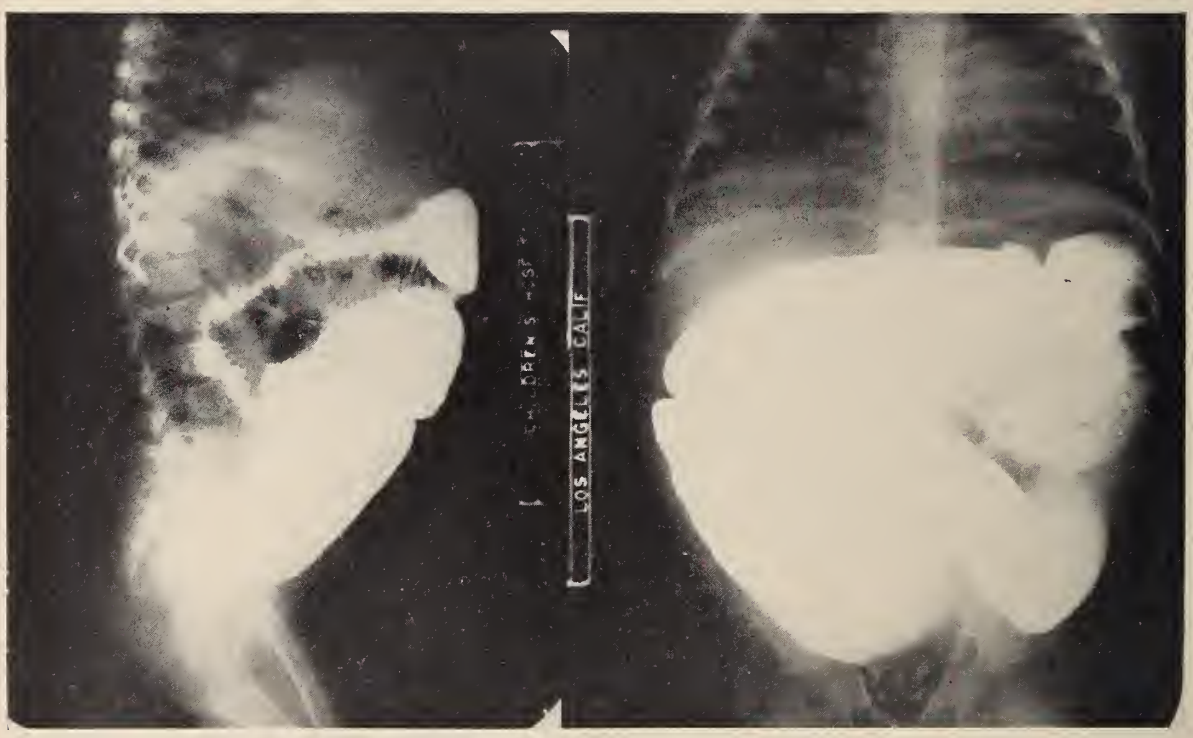

Figure 3.—Case 2: Barium enema before operation, showing the uniform dilatation of the colon in the posterior-anterior view, and the dilatation of the rectum in the lateral view.

were numerous episodes of distention, flatus, and borborygmus. The baby had not nursed well for the first weeks and feeding had remained a mild problem. There were three normal siblings. The baby was well nourished and developed, with moderate pallor. Mild perioral cyanosis was noted, and there was a loud systolic murmur over the precordium. The abdomen, when first examined, was prominent, soft, free of masses, with active peristalsis; but at times there was distention, with the outlines of intestinal pattern visible, and tympany and borborygmus. In roentgenologic examination with barium enema (Figure 3) the colon was observed to be uniformly dilated. The rectum, which was dilated, was funnel-shaped at the anus. Very little of the barium was evacuated.

During the next 18 months constipation was controlled by giving Mecholyl® and Zymenol.® These drugs, however, were not given regularly, and there were numerous episodes of abdominal cramps, distention, and occasionally vomiting, which were relieved by enemas.

Because of persistent albuminuria, renal studies were carried out and bilateral hydronephrosis and hydroureter were diagnosed. A stricture at the left ureteropelvic junction was relieved by pyeloplasty in December 1949.

In February, 1950, when the patient was two years of age, proctosigmoidectomy of the Swenson type and sympathectomy on the right side were performed. No special studies were made of the segment of bowel removed. The response to this treatment was poor. There was recurrent abdominal distention, and no spontaneous bowel movements were obtained after the patient left the hospital. When the tip of an enema tube was inserted into the rectum, however, a semiliquid stool was forcefully ejected.

A month after operation the patient was readmitted because of persistent vomiting and distention. At laparotomy the small bowel appeared to be normal, the cecum and transverse colon were distended, and no mechanical obstruction was found. Cecostomy was performed. Following operation there were several febrile episodes diagnosed as caused by recurrent pyelonephritis.

The patient was admitted again in June, 1950, with a history of vomiting, diarrhea, and abdominal pain of two days' duration and coma for two hours. The abdomen became distended and the patient died within twelve hours. At autopsy it was observed that the entire remaining large bowel was dilated and the muscle layers hypertrophied. In microscopic studies, no abnormalities were noted in the ganglia or nerves in the wall of the bowel in routine sections.

The case reported exemplifies the disease now specifically called congenital megacolon. Although there were complicating congenital lesions of the heart and kidneys, the patient was managed by modern conservative methods. The surgical procedure so beneficial to patients with typical Hirschsprung's disease only complicated the management.

FURTHER CONSIDERATIONS

In addition to these two definite clinical entities, a few cases have been reported in which there was agenesis of Auerbach's plexus in long spans of the colon, and even in the entire colon, causing obstruction.[27] At operation in those cases the involved portion of the bowel was observed to be narrow, with dilation proximally. The patients died in early infancy before the diagnosis was made. No reports on complete roentgenologic studies are available. Figure 4 indicates the segments of dilation and narrowing of the bowel typical of each of the conditions considered in this presentation.

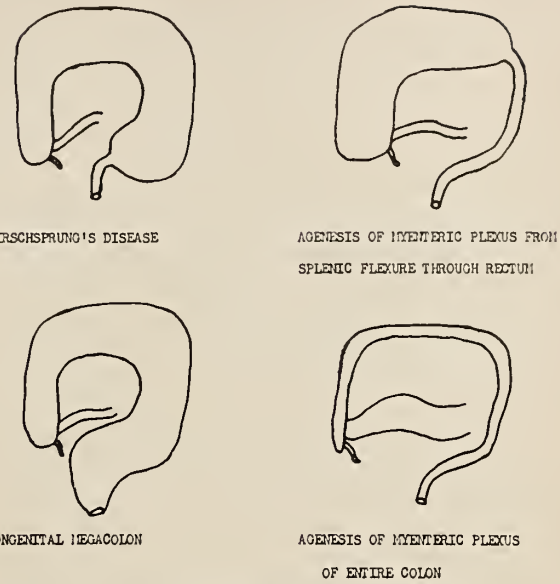

Figure 4.—Diagrams showing the configuration of the colon with various types of neurogenic lesions.

The work on the new concept of Hirschsprung's disease and allied disorders of the colon is not complete. It is apparent that there is a fairly close correlation between the complete absence of Auerbach's plexus and narrowing of the affected segment of bowel such as to make the roentgenographic appearance similar to that of partial mechanical obstruction. In some cases, however, the absence of the myenteric plexus extends for varying distances into the dilated portion. In others, areas of agenesis of the plexus have been found scattered along the colon with normal plexus in intervening segments. In some cases in which conditions otherwise are typical of Hirschsprung's disease, this peculiar distribution of Auerbach's plexus in the colon proximal to the sigmoid has been observed. It remains to be seen whether, under close observation, some of the more unusual and complex types of neurogenic disorders of the colon can be demonstrated by means of roentgen studies with barium enema.

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REFERENCES

1. Bargen, J. Arnold: Recent advances in the treatment of megacolon, M. Clin. North America, 32:981-987, July 1948.

2. Bill, Alexander H.: A new concept of the cause of Hirschsprung's disease or congenital megacolon, with a new method of treatment by surgery, Northwest Med. 49:341-344, May 1950.

3. Bodian, M., Stephans, F. D. and Ward, B. C. H.: Hirschsprung's disease and idiopathic megacolon, Lancet 1:6-11, Jan. 1949.

4. Cameron, J. A. Munro: On the aetiology of Hirschsprung's disease, Arch. Dis. Childhood, 3:210-211, Aug. 1928.

5. Cattell, R. B. and Colcock, B. P.: Congenital megacolon, S. Clin. North America, 26:644-655, June 1946.

6. Denny-Brown, D. and Robertson, E. Graeme: An investigation of the nervous control of defæcation, Brain, 58:256-310, June 1935.

7. de Takats, G. and Biggs, A. D.: Observations on congenital megacolon, J. Pediat., 13:819-846, Dec. 1938.

8. Fenwick, W. S.: Hypertrophy and dilatation of the colon in infancy, Brit. M. J., 2:564-567, 1900.

9. Finney, J. M. T.: Congenital idiopathic dilatation of the colon (Hirschsprung's disease), Surg., Gyn., & Obst., 6:624-643, 1908.

10. Grimson, K. S., Vandergrift, H. N. and Dratz, H. M.: Management and prognosis of megacolon (Hirschsprung's disease), Am. J. Dis. Child., 68:102-115, Aug. 1944.

11. Idem.: Surgery in obstinate megacolon, Surg., Gyn., & Obst., 80:164-173, Feb. 1945.

12. Hawkins, Herbert P.: Remarks on idiopathic dilatation of the colon, Brit. M. J., 1:477-483, Mar. 1907.

13. Hurst, Arthur F.: Anal achalasia and megacolon (Hirschsprung's disease): idiopathic dilatation of the colon, Guy's Hosp. Rep., 84:317-350, July 1934.

14. Klingman, Walter O.: The treatment of neurogenic megacolon with selective drugs, J. Pediat., 13:805-818, Dec. 1938.

15. Law, J. L.: Treatment of megacolon with acetylbetamethylcholine, Am. J. Dis. Child., 60:262-282, Aug. 1940.

16. Penick, Rawley M.: Problems in the surgical treatment of congenital megacolon, J.A.M.A., 128:423-426, June 9, 1945.

17. Scott, W. J. Wade and Morton, J. J.: Sympathetic inhibition of the large intestine in Hirschsprung's disease, J. Clin. Investigation, 9:247-262, Oct. 1930.

18. Stabins, S. J., Morton, J. J. and Scott, W. J. Merle: Spinal anaesthesia in the treatment of megacolon and obstinate constipation, Am. J. Surg., 27:107-111, Jan. 1935.

19. Swenson, O. and Bill, A. H., Jr.: Resection of rectum and rectosigmoid with preservation of sphincter for benign spastic lesions producing megacolon: experimental study, Surgery, 24:212-220, July 1948.

20. Swenson, O., Neuhauser, E. B. D., and Pickett, L. K.: New concepts of etiology, diagnosis and treatment of Hirschsprung's disease, Pediatrics, 4:201-209, Aug. 1949.

21. Swenson, O., Rheinlander, H. F. and Diamond, I.: Hirschsprung's disease: A new concept of the etiology, New England J. Med., 241:551-556, Oct. 13, 1949.

22. Telford, E. D. and Haxton, H. A.: Congenital megacolon, results of treatment by spinal anaesthesia, Brit. M. J., 1:827-828, May 1948.

23. Tiffin, M. E., Chandler, L. R. and Faber, H. K.: Localized absence of the ganglion cells of the myenteric plexus in congenital megacolon, Am. J. Dis. Child., 59:1071-1082, May 1940.

24. Wade, R. B. and Royle, Norman D.: Operative treatment of Hirschsprung's disease: A new method, M. J. Australia, 1:137-141, Jan. 29, 1927.

25. Whitehouse, F. R. and Kernohan, J. W.: Myenteric plexus in congenital megacolon, Arch. Int. Med., 82:75-111, July 1948.

26. Yeazell, L. and Bell, H. G.: Resection of the colon in six cases of Hirschsprung's disease, Surgery, 13:941-950, June 1943.

27. Zuelzer, W. W. and Wilson, J. L.: Functional intestinal obstruction on a congenital neurogenic basis in infancy, Am. J. Dis. Child., 75:40-64, Jan. 1948.

The Incidence of Splenic Metastasis of Carcinoma

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SUMMARY

The incidence of metastases to the spleen observed at autopsy in a series of 1,000 consecutive cases of malignant neoplasms of epithelial origin was 9 per cent; in a group of 104 cases of malignant neoplasms of non-epithelial origin, the spleen was involved in 45 per cent. These data do not support the contention that metastasis to the spleen is rare, or that the spleen possesses anti-neoplastic properties.

THE spleen has often been cited as an infrequent location of metastatic tumor deposits in man,[9, 12, 15] although some evidence has been presented to the contrary.[11, 13, 16] A large volume of experimental work has been performed in an effort to investigate the "anti-neoplastic" properties of the spleen.[14] It is the purpose of this paper to present additional evidence that the spleen should not be considered a rare site of metastasis.

MATERIAL AND RESULTS

The incidence of metastases to all sites, as observed at autopsy in 1,000 consecutive cases of malignant neoplasms of epithelial origin at the Montefiore Hospital between 1943 and 1947, was recorded. Some of the results of this survey have already been reported.[1, 2] There was metastasis to the spleen in 90 of the 1,000 cases. Table I gives the incidence of carcinoma arising in different sites and the number and percentage of metastases to the spleen from each primary site. Metastases to and direct extension to the capsule of the spleen were excluded as carefully as possible.

During the same period at the same hospital autopsy was done in 104 cases of malignant neoplasm of non-epithelial origin. The incidence of splenic involvement in this group is shown in Table 2. The spleen was involved in 47 cases, most often in association with lymphosarcoma and Hodgkin's disease.

DISCUSSION

Di Biasi[5] reported splenic metastases in 1.86 per cent of 9,761 cases of carcinoma, Gussembauer and Winiwarter[8] in 0.9 per cent of 1,445 cases, and Handley[10] in 0.2 per cent of 422 cases of carcinoma of the breast. Barron and Litman[3] noted splenic enlargement in seven of 1,000 cases of malignant neoplasm, but in only one of the seven was there metastasis of the tumor to the spleen. Ewing[6] considered metastasis to the spleen a rarity. Guttman[9] discussed the common explanations for the "infrequency" of splenic metastases, such as the motility of the spleen, the absence of afferent lymphatic vessels, and the sharp angulation of the splenic artery as it leaves the celiac axis. In 1942, Herbut[12] noted metastases in the spleen in only 2.4 per cent of 640 cases of carcinoma. On the basis of these observations, it would seem that metastasis to the spleen were indeed rare.

Other investigators, however, have reported observations not in accord with the foregoing. Warren and Davis[17] in 1934 noted metastases to the spleen in 4 per cent of 1,140 cases of neoplastic disease. As this was not significantly different from the incidence of renal metastases in their series, they saw no reason to believe that splenic tissue possessed anti-neoplastic properties. Yokohata[18] reported a high incidence of metastases to the spleen in a small group of cases carefully studied. Koletsky[13] observed tumor cells in the spleen in 11 per cent of 100 cases of carcinoma of the lung; Grauer[7] in four of 34 cases (11 per cent) of carcinoma of the pancreas; and Saphir and Parker[16] in 10 of 43 cases (23 per cent) of carcinoma of the breast. More recently Harman and Da Corso[11] noted splenic metastases in 13

Table 1.—*Incidence of Metastases to the Spleen in 1,000 Cases of Malignant Neoplasm of Epithelial Origin*

Site of Carcinoma	Number of Cases	Metastases to Spleen: Number	Metastases to Spleen: Per Cent
Breast	167	28	17
Lung	160	15	9.5
Stomach	119	7	6
Colon	118	6	5
Rectum	87	5	6
Ovary	64	17	27
Kidney	34	2	6
Uterus	23	2	9
Prostate	19	1	....
Bladder	19	1	....
Cervix	13	1	....
Nasopharynx	3	1	....
Fallopian tube	2	2	....
Primary site unknown	26	2	....
Others	146	0	....
Total	1,000	90	

Table 2.—*Incidence of Splenic Involvement in 104 Cases of Malignant Neoplasm of Non-Epithelial Origin*

Neoplasm	Number of Cases	Involvement of Spleen: Number	Involvement of Spleen: Per Cent
Lymphosarcoma	22	18	71
Hodgkin's disease	21	15	82
Reticulum cell sarcoma	16	8	50
Melanosarcoma	7	3	....
Kaposi's sarcoma	5	2	....
Miscellaneous	33	1	....
Total	104	47	

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TABLE 3.—*Incidence of Metastatic Involvement of Various Visceral Organs, Observed at Autopsy in 1,000 Consecutive Cases of Carcinoma*

Site of Metastases	Percentage of Cases With Metastases
Kidney	12.5
Pancreas	11.5
Ovary	11.0
Spleen	9.0
Uterus	6.0
Gallbladder	6.0
Bladder	3.5

per cent of 116 cases of carcinoma; and in a group of 30 cases selected because one or more visceral sites were involved, metastases to the spleen were present in 15.

Although the literature contains conflicting reports on the incidence of metastases to the spleen, in general the more recent reports suggest a higher incidence than the older ones.

Again with regard to the previously mentioned series of 1,000 cases at Montefiore Hospital, the incidence of metastases from neoplasms of epithelial origin to a number of organs is listed in Table 3. There was a higher incidence of metastases to the spleen than to the uterus, the gallbladder or the bladder, and only a slightly higher incidence of metastases to the kidney, to the pancreas or to the ovary than to the spleen. De Long and Coman,[4] in recent experimental work with tumor implants, noted no difference in the incidence of neoplastic growth in the spleen as compared with that in the adrenal glands or the kidneys. Hence, if metastasis to the spleen is considered a rarity, then it is logical to look upon metastases to these other organs as rare also.

The data on incidence of splenic involvement by malignant tumors of non-epithelial origin (Table 2) do not represent the actual incidence of metastases in these cases, since in some instances the tumors may have been primary in the spleen. The high percentage of cases in which there was splenic involvement supplies additional evidence, however, that the spleen is by no means infertile soil for tumor growth, either primary or secondary.

Probably the incidence of metastases to the spleen would be found to be even higher if exhaustive histopathologic studies of splenic tissue were performed in all cases of carcinoma. Furthermore, if the incidence of metastasis per volume of splenic tissue is compared with the incidence for equivalent volumes of lung or liver, splenic metastatis is just as common on a volume for volume basis as is hepatic or pulmonary metastasis. To speak of the spleen as a "rare site" of metastasis is no longer justified.

REFERENCES

1. Abrams, H. L.: Skeletal mètastases in carcinoma, Radiology, 55:534-538, Oct. 1950.

2. Abrams, H. L., Spiro, R., and Goldstein, N.: Metastases in carcinoma: Analysis of 1,000 autopsied cases, Cancer, 3:74-85, Jan. 1950.

3. Barron, M., and Litman, A. B.: Importance of hepatomegaly and splenomegaly in differential diagnosis, Arch. Int. Med., 50:240-256, Aug. 1932.

4. De Long, R. P., and Coman, D. R.: Studies on metastasis: The effect of anatomical location on the growth of tumor implants, Abst. Scientif. Prog. Am. Assn. for Cancer Research, Cancer Research, 10:212, April 1950.

5. Di Biasi, W.: Virchow's Arch. f. Path. Anat., 261:885-918, 1926, cited by Guttman.[9]

6. Ewing, J.: Neoplastic Diseases, W. B. Saunders Co., Philadelphia and London, 1928 (p. 87).

7. Grauer, F. W.: Pancreatic carcinoma: A review of 34 autopsies, Arch. Int. Med., 63:884-898, May 1939.

8. Gussembauer and Winiwarter: Cited by Krumbhaar.[15]

9. Guttman, P. H.: Carcinoma to the spleen: Metastases, Cal. and West. Med., 52:156-158, April 1940.

10. Handley, W. S.: Cited by Krumbhaar.[15]

11. Harman, J. W., and Da Corso, P.: Spread of carcinoma to the spleen, Arch. Path., 45:179-186, Feb. 1948.

12. Herbut, P. A., and Gabriel, F. R.: Secondary cancer of the spleen, Arch. Path., 33:917-921, June 1942.

13. Koletsky, S.: Primary carcinoma of the lung: A clinical and pathologic study of one hundred cases, Arch. Int. Med., 62:636-651, Oct. 1938.

14. Krumbhaar, E. B.: Functions of the spleen, Phys. Rev., 6:160-200, Jan. 1926.

15. Krumbhaar, E. B.: The incidence and nature of splenic neoplasms, with a report on forty recent cases, Ann. Clin. Med., 5:833-860, March 1927.

16. Saphir, O., and Parker, M. L.: Metastasis of primary carcinoma of the breast, with special reference to spleen, adrenal glands, ovaries, Arch. Surg., 42:1003-1018, June 1941.

17. Warren, S., and Davis, A. H.: Studies on tumor metastasis: *V*. The metastases of carcinoma to the spleen, Am. J. Cancer, 21:517-533, July 1934.

18. Yokohata, T.: Cited by Guttman.[9]

Trichophyton Tonsurans (Crateriforme) Infection of the Scalp

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SUMMARY

Of 484 cases of ringworm of the scalp observed in a period of two and a half years at a clinic in Los Angeles, 57 (11.78 per cent) were caused by Trichophyton tonsurans, an organism previously considered an infrequent cause of tinea capitis in the United States. The hairs at the site of infection with this organism are distinctively fluorescent when viewed under a Wood light—glowing white rather than green as do hairs infected with microsporum. Endothrix spore formation may be noted in microscopic examination of infected hairs. Material planted on Sabouraud's media grows as a typical crateriform colony. Occasionally variant growths on cultures are obtained.

Trichophyton tonsurans may cause either dry, scaly lesions or inflammatory reaction. In the present series the incidence of cure was higher and the period of treatment shorter for patients with the inflammatory variety. Various antifungal preparations were employed for topical application and although the results were extremely variable, it was felt that some benefit was derived from their use. For lesions of the dry, non-inflammatory type, roentgen ray epilation appeared to be the treatment of choice.

DURING the past decade throughout the United States considerable attention has been focused on tinea capitis, which in many localities has assumed epidemic proportions. The specific fungus responsible for the "epidemic form" is the Microsporum audouini (human type). Of lesser epidemiologic importance and causing relatively fewer infections is the Microsporum lanosum (animal type). These two species of Microsporum were the agent in the great majority of the cases recently reported. A few of the reports[2, 3, 7] listed a small percentage of the cases as caused by various species of Trichophyton. Because of the few patients available for study, there is little in the American literature about trichophytosis of the scalp, and, more specifically, tinea capitis caused by Trichophyton tonsurans. Therefore, when quite unexpectedly many children with Trichophyton tonsurans infection of the scalp were observed, the opportunity for study of this uncommon variety of tinea capitis was welcomed.

This kind of ringworm of the scalp, which has always been considered a rarity, is now prevalent in the Los Angeles area. Fifty-seven cases were observed at the Southeast Tinea Capitis Clinic of the Los Angeles City Health Department in a period of two and a half years. In the same period, 36 cases were observed at the Health Department's Central Tinea Capitis Clinic.

Trichophyton tonsurans infection of the scalp was first clearly delineated from other forms of ringworm in 1844 by David Gruby.[4b] In 1845 Malmsten[10] described the same condition and suggested the name *Trichophyton tonsurans* for the causative organism. Both Gruby and Malmsten had reported that the infected hairs were filled with spores but it remained for Sabouraud,[13] nearly 50 years later, 1894, to grow the fungus on special media. Sabouraud named the organism *Trichophyton crateriforme*. Priority, however, has been given to *Trichophyton tonsurans*.

This variety of ringworm has been well known in England,[6] France[13] and other European countries,[9] but in the United States has never gained a foothold. Although a survey of recent reports from areas where tinea capitis is rampant indicates the rarity of this kind of infection,[1, 14, 9] with shifting of populations at this time it would appear that conditions are ripe for a country-wide epidemic similar to that which was caused by Microsporum audouini about ten years ago.

CLINICAL MANIFESTATIONS

Although tinea capitis caused by Trichophyton tonsurans can often be recognized from the clinical manifestations, Wood light examination (inspection in a darkened room under filtered ultra-violet rays) is of further help in diagnosis. Even so, definitive diagnosis depends upon mycologic examination.

As in Microsporosis, the disease is characterized by the formation on the scalp of single or multiple baldish scaly patches which may be dry and not inflamed, or inflamed in variable degree. The individual plaques are usually discrete, circular, and from 0.5 to 6.0 cm. in diameter (Figure 1). Occasionally, larger areas are encompassed by the confluence of adjacent small patches. Usually, however, the individual lesion caused by Trichophyton tonsurans is less well outlined and tends to be smaller than that of microsporosis. Early in infection the lesion is similar to the annular lesion characteristic of tinea circinata, with a prominent, sharply marginated raised border. At this stage there is little loss of hair; and it is only in this stage that the term "non-fluorescent ringworm"[8] is applicable, for under

Presented before the Section on Dermatology and Syphilology at the 80th Annual Session of the California Medical Association, Los Angeles, May 13-16, 1951.

From the Southeast Tinea Capitis Clinic, Los Angeles City Health Department, George M. Uhl, M.D., Health Officer; Bureau of Medical Services, L. S. Goerke, M.D., Chief.

Figure 1.—Multiple small, dry patches of alopecia with slight scaling. Trichophyton tonsurans infection, non-inflammatory.

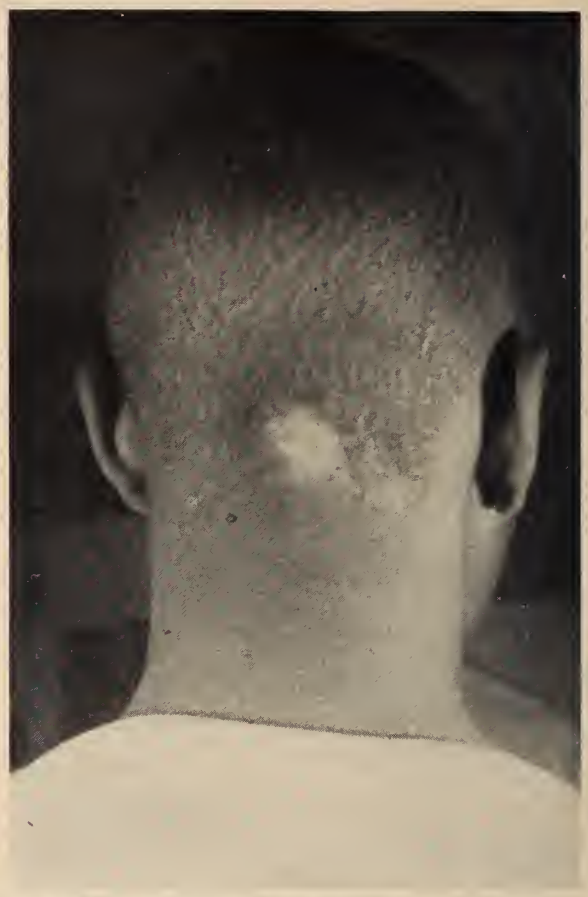

Figure 2.—Residual bald patches of involuted kerion caused by Trichophyton tonsurans.

the Wood light the hairs appear normal.* As the disease progresses, the infected hairs break off at the surface of the scalp, although characteristically a number of longer, normal-looking hairs remain in the otherwise bald patch. A grayish-white thin scale covers the surface. Upon examination under magnification, some short, thickened hair stubs projecting 2 to 3 mm. above the surface, and many minute keratotic follicular papules may be noted. Within each papule is an incarcerated twisted hair.

Inflammatory reactions are common. They vary in degree from slight edema and erythema with oozing and crusting to deep, draining abscesses and phlegmons (kerion). Frequently a few inflamed follicular papules or pustules are present in an otherwise dry and non-inflammatory patch. Extension of the inflammatory process may involve other follicles in the patch, and thus progression through stages of development from superficial perifollicular reaction to the production of true kerion may occur. As a consequence of inflammation, smooth, shiny atrophic depressed plaques bearing a close resemblance to the lesions of alopecia areata result (Figure 2). Regrowth of hair, however, usually takes place, although some scarring and partial alopecia may result. No patient in the present series had permanent complete alopecia.

* The term "non-fluorescent ringworm," as applied to Trichophyton tonsurans infection of the scalp to differentiate it from Microsporum infections, is actually a misnomer. The infected hair stubs and plugs in the former give off a white fluorescence in contrast to the brilliant green of the infected hairs of the latter.

WOOD LIGHT EXAMINATION

The appearance of the infected scalp under filtered ultra-violet rays is quite distinctive and, in the authors' experience, usually diagnostic. Whereas in microsporosis the infected hairs emit a brilliant green fluorescence, in Trichophyton tonsurans infections each involved follicle is identified by a dull to gleaming white scaly plug filling the orifice. Removal of the plug exposes an attached and imbedded short hair. If the hair has escaped incarceration in the mass of keratin, it projects through the follicular plug as a thickened white stub. When the plug or protruding hair is extracted, the intrafollicular portion can be faintly visualized but it does not fluoresce. Fluorescence is due to the keratin scale which fills the follicular orifice and which also extends as a sheath along the extrafollicular portion of the hair. Frequently, extensive involvement is noted under the Wood light in cases in which clinical inspection indicated only a few areas of infection. Very small spots involving only a few follicles can readily be identified under the Wood light.

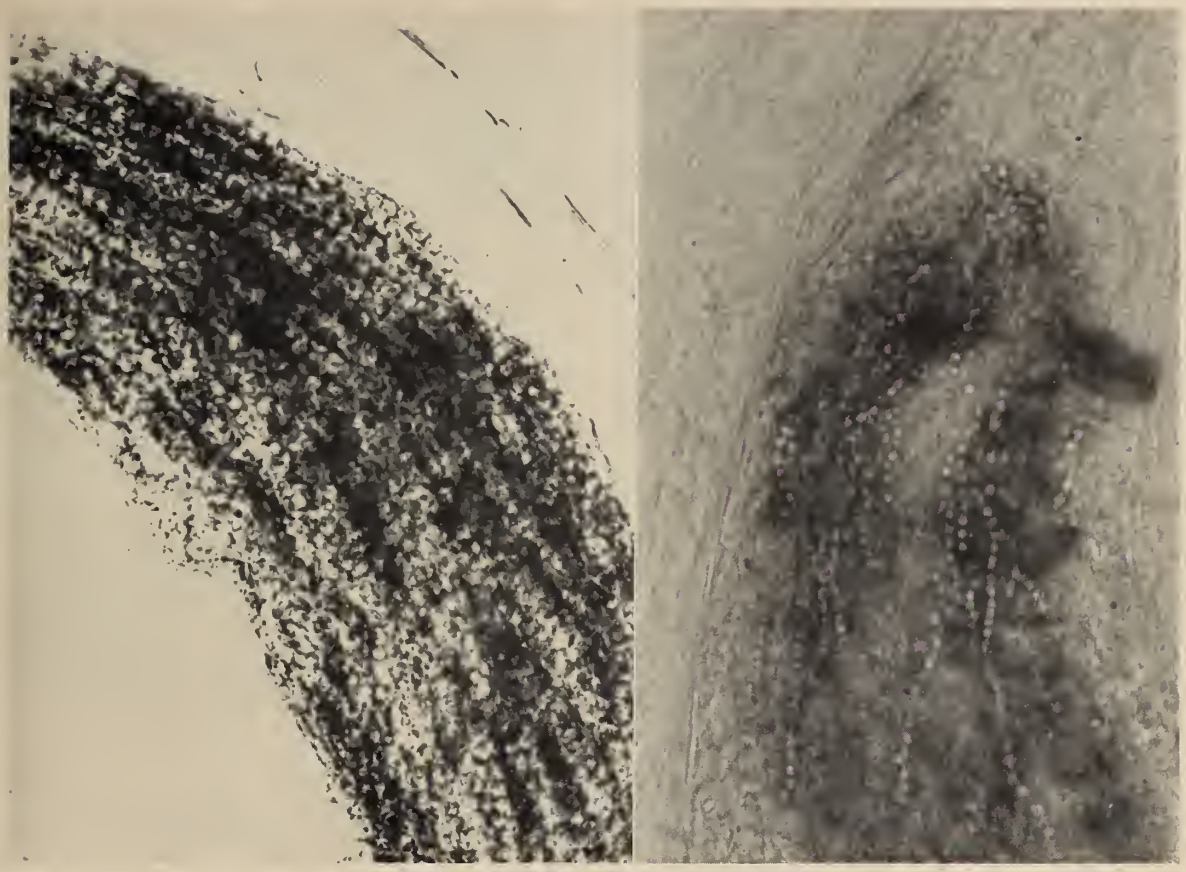

Figure 3.—Left—Endothrix spore formation. Spores are packed within the hair. Right—Arthrospores in long chains within the hair.

MYCOLOGIC CHARACTERISTICS

If a microsporic hair, after suitable preparation in sodium hydroxide solution, is viewed under a microscope, ectothrix spore formation characteristic for microsporosis may be observed — oval or round refractile bodies, 2 to 4 micra in diameter, densely packed, forming a sheath which encloses the hair from just above the bulb to varying distances on the broken shaft. This sheath corresponds to the fluorescent green area seen under the Wood light.

In Trichophyton tonsurans infection, the interior substance of the diseased hair is filled with a mass of spores united in chains, running parallel to the long axis of the hair (Figure 3). The spores are larger, 4 to 6 micra in diameter, and tend to be quadrangular in form. Where the hair has been unable to penetrate through the follicular plug, it lies embedded in a mass of keratin, assuming a twisted, spiral *S* or *Z* shape (Figure 4). Those hairs which project beyond the follicular opening are covered in the extrafollicular portion by a keratin sheath. Spores are not present in the sheath except when the cortex of the hair breaks and spores spill out from the interior. In very early infection, before any appreciable scale develops, the involved hairs appear normal and are not fluorescent, even though they are filled with spores.

Figure 4.—Twisted degenerating hair imbedded in follicular scale. Spores spill out where the hair breaks.

CULTURAL ASPECTS

On Sabouraud's glucose agar media, growth of Trichophyton tonsurans begins as a white fluffy patch which extends peripherally. Later the colony becomes more compact and develops into a flat, velvety, cream-colored disk. The center of the patch sinks and the edges become elevated, thus forming the characteristic crater from which derives the term *crateriforme.** Frequently a small knob appears at the bottom of the crater. Surrounding the walls is a white mycelial fringe growing out into the media. The surface of the colony takes on a deepening cream to beige powdery appearance as it ages. The gross morphologic characteristics are distinctive; typical colonies, as described, are readily identified (Figure 5). Early in the investigations in the present study, however, it was noted that some of the growths obtained differed considerably from the typical crateriform colonies. In some instances there was so much variation from the typical in color, folding and crater formation that it was felt the organisms were of other species. In microscopic features, these aberrant cultures were similar to each other and to typical cultures of Trichophyton tonsurans. Attempts to identify these variant cultures with the specific organisms described in the various texts and references under such names as T. acuminatum, T. cerebriforme, T. sulfureum, etc., were fruitless. The descriptions given by various authorities were found to be vague and inadequate and frequently in conflict. Letters and cultures were dispatched to a number of leading mycologists in this country for aid in this problem. In every instance the replies indicated that the same difficulty in identification existed in other quarters.[12] The consensus of many American mycologists at present seems to be that the members of the crateriform group cannot be identified accurately as to species, and in general must be considered as strains of Trichophyton tonsurans.

DIFFERENTIAL DIAGNOSIS

Differentiation of Trichophyton tonsurans infection of the scalp from other conditions which resemble it should not be difficult if the Wood light procedure, the microscopic examination of the hair, and the culture method are utilized. The common microsporum infections are readily identified by the green-fluorescent hairs, the ectothrix nature of the spores on the infected hair, and specifically by the characteristic colonies on culture.

In children, the crusted lesions of impetigo of the scalp may simulate inflammatory Trichophyton tonsurans infection, but the thick crust and oozing base, the absence of white plugs under the Wood light, and laboratory confirmation of fungous disease should decide the issue. Typical impetiginous lesions are frequently also found on the face or ears and there is usually quick response to various germicidal and antibiotic preparations. However, impetigo may lead to temporary alopecia much like that which occurs in involuted inflammatory Trichophyton tonsurans infection (bald ringworm of the English), and unless active lesions are present, it may be impossible to arrive at a definitive diagnosis. Similarly, the plaques of "bald ringworm" often bear a close resemblance to alopecia areata, although the latter condition is not preceded by inflammation.

Fig. 5.—Crateriform colonies of Trichophyton tonsurans.

Other diseases of the scalp that are characterized by scaling patches, such as seborrheic dermatitis or psoriasis, ordinarily do not cause loss of hair.

The authors have observed a few patients with trichotillomania and trichokryptomania who had bald spots on the scalp similar to those caused by Trichophyton tonsurans infections. However, in those instances there was no evidence of scaling or inflammation, and the patients, when questioned, readily admitted the cause.

As the severe inflammatory reaction (kerion) may be mistaken for a carbuncle, it is well to examine hairs at the site of such a lesion under a Wood light lest incision be made unnecessarily.

CLINICAL MATERIAL

During the two and one-half year period from July 1947 to January 1950 the diagnosis of tinea capitis, based on the cultural isolation of a specific pathogenic fungus, was made in 484 cases. The relative frequency of infection with various organisms is shown in Table 1. In 57 cases the organism was Trichophyton tonsurans. The patients were from 4 to 15 years of age. Fifty were boys, seven girls. All were Negroes, but no particular significance can be attached to this inasmuch as the vast majority of the patients observed at the clinic are of that race.

* The crateriforme group includes the following four species: Trichophyton tonsurans (T. crateriforme); T. epilans (T. cerebriforme); T. Sabouraudi (T. acuminatum); and T. sulfureum.

TABLE 1.—*Incidence of various organisms in 484 cases of tinea capitis.*

Organism	No. of cases	Per cent
Microsporum audouini	339	70.04
Microsporum lanosum	86	17.77
Microsporum fulvum	2	.41
Trichophyton tonsurans	57	11.78
Total	484	100.00

From a prognostic viewpoint, classification of the disease into inflammatory and non-inflammatory types was advantageous. Twenty-seven children (47 per cent) had lesions of the dry, scaly, non-inflammatory type. The inflammatory type was further divided into the superficial variety and kerion. The superficial variety was characterized by follicular papules and pustules, edema, oozing, and crusting. This kind of reaction frequently subsided with or without treatment. It was observed many times, however that slightly inflamed areas were converted into kerion by treatment with various antifungal ointments or by home treatment with iodine or other irritant preparations. In other cases, kerion apparently arose spontaneously. Kerion occurred in 17 patients (30 per cent), the superficial inflammatory variety of the disease in 13 (23 per cent). Thus, in the majority of the patients (53 per cent) some degree of inflammatory reaction was present. Of the 57 patients, 49 were sufficiently cooperative to permit of some evaluation of the course of the disease and response to therapy. Each of the 49 patients was observed at the clinic for a period of at least two months and the majority for a much longer time.

TREATMENT AND RESULTS

Treatment consisted of daily applications, at home, of various antifungal preparations including salicylanilide ointment, Sopronol® ointment, sulphur ointment and a few newly developed antifungal preparations furnished by pharmaceutical firms for evaluation. Directions were given to shampoo the child's head every evening and then to rub the medication vigorously into each patch. The antifungal preparation was also applied once or twice during the day. Clipping or shaving of the hair from the scalp was requested at intervals of one to two weeks. This was extremely important from the standpoint of determination of cure, for with regrowth of hair it became increasingly more difficult to visualize the white plugs and short hairs of the infected areas. Single or small groups of infected follicles may very readily be overlooked and serve as a nidus for reinfection. Moreover, follicular accumulations due to grease, soap, medicament, or keratin, may be mistaken for infected hair follicles in examination with a Wood light. For this reason, careful shampooing and rinsing of the hair before each visit to the clinic was insisted upon. Results with detergent shampoos were better than those obtained with soaps. A declaration of cure was made with reservation and only after repeated Wood light examinations and mycologic studies of any suspect follicular material. Determination of cure in Trichophyton tonsurans infection is much more difficult than is the case with Microsporum infection. In Wood light examination the white plugs and short white hairs which characterize Trichophyton tonsurans ringworm are not as easily identified as are the brilliant green hairs of microsporosis.

Results in 49 cases in which the patients were under treatment for at least two months are shown in Table 2. There was no untreated control group.

As it was not known how well directions for treatment at home were followed, and as there were other variable factors, the response to various medications could not be satisfactorily evaluated. However, certain impressions were gathered, and it was possible to derive some information of a general nature. The presence of inflammation is a good prognostic sign: The deeper the reaction, the better the result. Significance can be attached to the observation that the incidence of cure was much higher in those patients who had inflammation than in those who had lesions of the dry, non-inflamed type. Twelve patients with kerion were free of infection after an average treatment period of 5.7 months, whereas for the ten patients with lesions of the dry type who were cured, the average treatment period was 11.6 months. It was noted that the dry, non-inflammatory type of infection was usually resistant to all forms of local therapy. A number of patients with this variety of the disease still had infection two years after treatment was started. Whether this infection tends to spontaneous cure at puberty, as does tinea capitis due to Microsporum audouini, cannot definitely be answered at this time. There were no adults in the series. However, at dermatological meetings in Los Angeles a number of cases of adults with tinea capitis caused by Trichophyton tonsurans have been presented. It is the authors' impression that many of the children with infection of the resistant type may carry the disease into adult life unless inflammatory reaction develops. Continued observation of the uncured members of this group may confirm or alter this impression.

Roentgen ray epilation was used in a few of the patients with successful results. This undoubtedly is the treatment of choice for the non-inflammatory resistant variety of the disease.

Treatment of kerion consisted of application of hot magnesium sulphate compresses and 5 per cent ammoniated mercury ointment. This usually checked the severe inflammatory process. In some cases of multiple kerion, procaine penicillin was given parenterally with prompt response.

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TABLE 2.—*Results of Treatment*

Kind of lesion	No. Patients	Cured	Not Cured	Average Period of treatment (months)	Range of Period of treatment (months)
Dry	23	10	13	11.6	4 to 22
Inflammatory:					
Superficial	10	5	5	5.4	4 to 8
Kerion	16	12	4	5.7	3 to 12

REFERENCES

1. Benedek, T. and Felsher, I. M.: Epidemiology of tinea capitis, Arch. Dermat. and Syph., 49:120-123, Feb. 1944.

2. Burgess, J. F.: Fungus infections of the skin, Arch. Dermat. and Syph., 12:853, 1925.

3. Carrion, A. L. and Silva, M.: Ringworm of the Scalp in Puerto Rico, Puerto Rico J. Public Health and Trop. Med., 19:329-391, March 1944.

4. (a) Compt. rendus Acad. Sc. 17:301, 1843.
(b) Compt. rendus Acad. Sc. 18:583-585, 1844.
cited by Zakon, S. J. and Benedek, T.: David Gruby and the centenary of medical mycology, Bull. Hist. Med., 15:2, July 1944.

5. Conant, N. F., et al.: Manual of Clinical Mycology, W. B. Saunders Co., 1945.

6. Fox, T. C.: A further contribution to the study of the endothrix Trichophyton flora in London, illustrated by a collection of cultures and photographs, Proc. Royal Soc. Med., 2:3, Jan. 1909.

7. Lehman, C. F., et al.: Cultural survey of tinea capitis in San Antonio, Texas, Arch. Dermat. and Syph., 61:488, March 1950.

8. Levin, O. L. and Behrman, H. T.: Problem of nonfluorescent ringworm of scalp, J.A.M.A., 128:350-352, June 2, 1945.

9. Lewis, G. M. and Hopper, M. E.: An Introduction to Medical Mycology, Year Book Publishers, Inc., 3rd Ed., 1948.

10. Malmsten, P. H.: Trichophyton tonsurans, harskärande Mogel. Bidrag till utredande Af de Sjukdomar, som Valla harets affall. Stockholm, 1845. Translated into German by F. C. H. Craplin, Arch. fur Anat., Physiol., u. Wissen, Med., 1848.

11. McCarthy, L.: Diagnosis and Treatment of Diseases of the Hair, C. V. Mosby Co., 1940, p. 322.

12. Personal communications.

13. Sabouraud, R.: Les Teignes, Paris, 1910, Masson et Cie.

14. Steves, R. J., and Lynch, F. W.: Ringworm of the Scalp; report of present epidemic, J.A.M.A., 133: 306-309, Feb. 1, 1947.

The Medical Care Dollar

Americans spent $8,500,000,000 on medical care in 1950. . . . Bureau of Economic Research of A.M.A. analyzes U.S. Commerce Dept. study . . . this is 4.4 per cent of total spent for all consumers' goods and services . . . physicians received $2.4 billion, hospitals $2.0 billion, drugs and sundries $1.4 billion, dentistry $1.0 billion and other medical care $1.7 billion . . . from 1930 to 1950, physicians' share of medical care dollars fell 12 per cent . . . hospitals' share increased 66 per cent, dentists' dropped 26 per cent, drugs' declined 12 per cent and "others" rose 5 per cent.

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Carcinoma of the Ampulla of Vater

Whipple Operation and Ten-Year Arrest in Three Cases

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SUMMARY

For their value as factors in the evaluation of pancreatoduodenectomy for carcinoma of the ampulla of Vater, the late results in three cases in which the Whipple operation was performed for this lesion are presented. At the time of the report, the time that had elapsed since operation was 12 years in one case, 11 in another and 10 in the third. After this article was written, one patient died of carcinoma of the body of the pancreas, but whether the lesion was a recurrence, a metastatic growth, or a second primary lesion could not be determined. There was no evidence of recurrence or metastasis in two of the patients. This report is based upon observation in recent surgical care of two of the patients and upon direct information of the other patient.

SEVENTEEN years have elapsed since Whipple, Parsons and Mullins[6] presented their original radical procedure of two-stage pancreatoduodenectomy in the sugical treatment of carcinoma of the ampulla of Vater. Until then the accepted operation for malignant lesions of the ampulla and the papilla of Vater was transduodenal excision of the tumor, and complete surgical eradication of the lesion was rarely accomplished. In the intervening years many modifications in the surgical technique of pancreatoduodenectomy have been reported, but the procedure in general has become known throughout the surgical world as the Whipple operation. Also, as the technique of the procedure has become standardized, surgeons have adapted the operation to malignant lesions of the head of the pancreas, the common duct, the stomach and duodenum and other lesions in the area, some of which are benign in character.[2, 4, 5] It would seem that the technique of the procedure has become more standardized than have the indications for the operation, and it is only through adequate follow-up in individual cases that the operation can eventually be evaluated in its application to a specific disease. The purpose of this paper is to report the late result in three patients upon whom Whipple operations were performed, by the late Dr. Verne C. Hunt, for carcinoma of the ampulla of Vater. One of the operations was done 12 years, one 11 years, and one more than 10 years ago.

Dr. Hunt and the author, during their association, operated upon five patients who had carcinoma of the ampulla of Vater. The surgical procedures consisted of transduodenal cautery excision of the ampulla of Vater, with reimplantation of the common duct and the duct of Wirsung into the duodenum in two cases, and one-stage Whipple procedure in three cases. In 1941 Hunt[4] reported the results of the two transduodenal cautery excision procedures and two of the Whipple procedures. At that time the results were as follows:

Of the two patients upon whom transduodenal excision of the ampulla had been done, one died 25 months after the operation of extensive metastases to the mediastinum. The other was alive, but with metastases, 34 months after the operation. (This patient died four years after the operation of generalized abdominal metastases.) Both the patients in whom the Whipple procedure was carried out were alive and well at the time of Dr. Hunt's report. Subsequently Dr. Hunt and the author employed the Whipple procedure in another case which was not reported. Two of the three patients recently were again under the author's surgical care, and direct information concerning the other is available to him.

CASE REPORTS

The cases are numbered 3, 4 and 5 in order that cases 3 and 4 may be numbered as they were in Dr. Hunt's original report.

Case 3 (Abstracted from Dr. Hunt's report): A woman 60 years of age, first observed March 13, 1940, had progressive, painless jaundice of four months' duration, with loss of 50 pounds in body weight. There was no history suggestive of biliary colic at any time. The patient was emaciated and there was intense jaundice. Areas of excoriation and multiple pustules over the entire body were noted. The liver was enlarged to the level of the umbilicus and the distended gallbladder was palpable. There was complete uterine prolapsus and edema of the lower extremities to the knees. The diagnosis was carcinoma of the head of the pancreas or common duct. At operation the gallbladder was observed to be distended and the common duct was dilated. When the common duct was explored a tumor 2 cm. in diameter was palpated in the ampulla. The duodenum was incised and the tumor was visualized.

Procedure. One stage Whipple operation: Resection of the duodenum and the head of the pancreas; ligation and division of the common duct; division and ligation of the duct of Wirsung; cholecystogastrostomy, posterior gastroenterostomy and choledochostomy.

The pathologic diagnosis was adenocarcinoma, Grade II, of the ampulla of Vater, with invasion of the pancreas. (Figure 1.)

Material drained postoperatively had the characteristics of pancreatic secretion and later contained bile. A catheter

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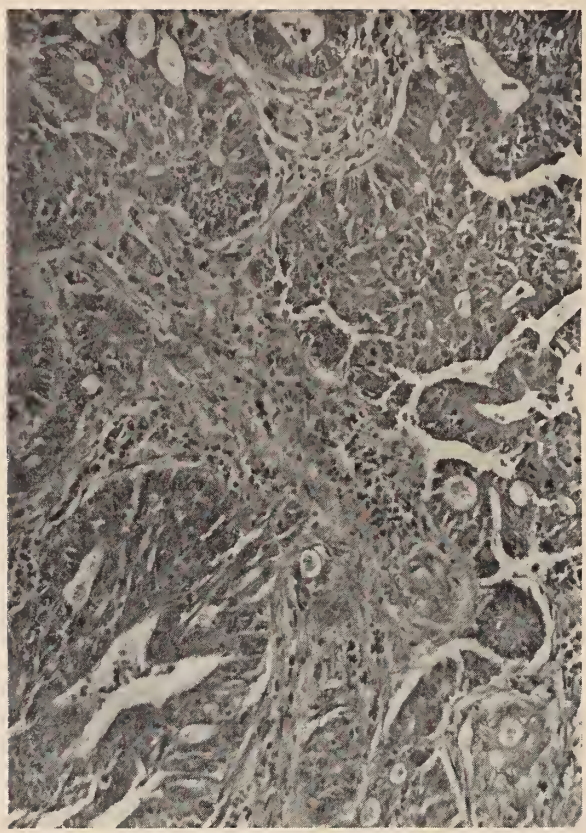

Figure 1.—Photomicrograph of tumor, Case 3.

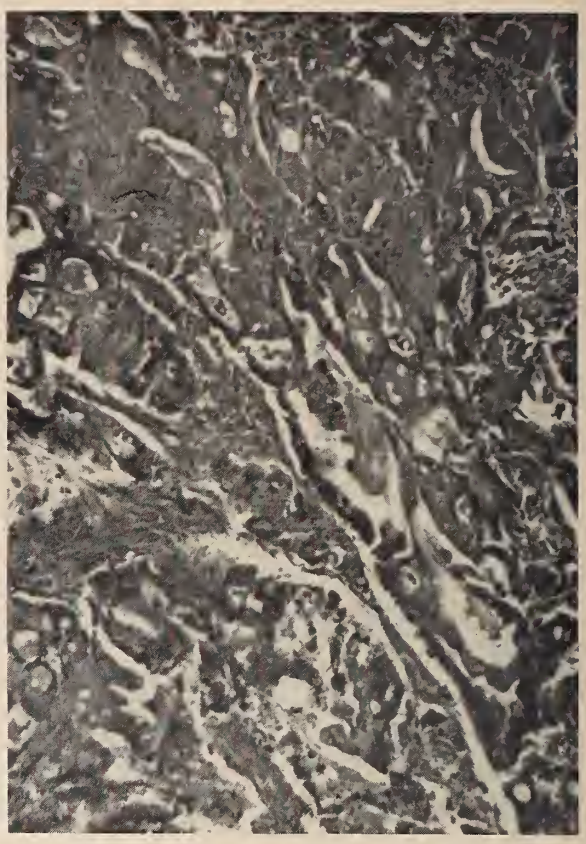

Figure 2.—Photomicrograph of tumor, Case 4.

was inserted into the sinus and continuous suction was maintained. After 27 days the sinus was packed with gauze, drainage ceased and the sinus healed in a few days. The patient was dismissed from the hospital 48 days after the operation.

Follow-up: After the death of Dr. Hunt in 1943, the patient had no medical care throughout the remainder of the war years. When examined in July, 1947, the patient weighed 175 pounds and the chief complaints were related to obesity and uterine prolapsus. Appetite and bowel habits were normal. There was no evidence of recurrence or metastases.

Observed again in July, 1950, the patient, then 71 years of age, had difficulty in voiding because of prolapsus, and there was intermittent bleeding from the uterus. There were no digestive complaints and no evidence of recurrence or metastases. The weight was still 175 pounds.

Vaginal hysterectomy was carried out. The postoperative course was very satisfactory and the patient was dismissed from the hospital on the eighth postoperative day. When last observed she was entirely well.

* * *

Case 4 (Abstracted from Dr. Hunt's report): A woman 43 years of age was admitted to hospital January 29, 1941, because of anorexia, nausea and pain radiating into the back for three months, jaundice for one month, and a loss of thirteen pounds in body weight.

Neither the liver nor the gallbladder was palpable. Secondary anemia was noted in laboratory studies, and calcification of the gallbladder was observed roentgenographically.

The preoperative diagnosis was calculous disease of the gallbladder and of the common duct. At operation, the gallbladder was observed to be thick-walled and it was contracted on a single large stone. The common duct was greatly dilated.

Operation included cholecystectomy, exploratory choledochotomy, and T-tube drainage of the common duct.

When the T-tube was clamped, profuse bile drainage developed. In a cholangiogram, complete block of the common duct was observed. In exploratory duodenotomy six weeks later an ampullary tumor which seemed to involve the posterior wall of the duodenum and the head of the pancreas was observed. Total duodenectomy and cautery excision of part of the head of the pancreas, pancreato-jejunostomy, choledochojejunostomy and posterior gastroenterostomy were carried out. (The open end of the jejunum was drawn up and sutured over the severed head of the pancreas.)

The pathologic diagnosis was adenocarcinoma of the papilla of Vater, Grade III, with involvement of the duodenum and extension to the head of the pancreas and adjacent lymph nodes. (Figure 2.)

The postoperative course was entirely satisfactory. There was drainage of bile but not of pancreatic secretion. The patient was dismissed from the hospital on the 24th day.

Follow-up: The patient remained well until June, 1949, when acute obstruction of the small intestine developed. At operation[1] the obstruction was observed to be caused by primary carcinoma of the ileum, and resection with end-to-end anastomosis was done. Thereafter the patient had vague distress in the right upper quadrant of the abdomen, but at the time of this report there was no evidence of recurrence or metastasis of either of the primary tumors.

(After this article was submitted for publication, the patient in Case 4 was operated upon elsewhere for recurrent obstruction of the small bowel. At operation a mass,

described as the size of a large lemon, was observed in the body of the pancreas. A specimen of the mass was excised and the pathologic report was mucoid adenocarcinoma. The pathologist made the following comment: "While the tumor is not histologically identical with the structures of the previous known primaries in the ampulla and in the jejunum, it is compatible with recurrence or metastasis of these tumors. Likewise, it may represent a separate primary carcinoma of the pancreas, since primary carcinoma of the pancreas may produce this morphology." As the patient was not in satisfactory condition for pancreatectomy, the incision was closed. When reoperation was carried out several months later, the tumor was deemed inoperable. It had grown considerably in size and had encircled the aorta and the portal vein. The patient died August 1, 1951. It was never possible to determine whether this tumor was a recurrence or a metastasis of the original tumor or whether it was another primary carcinoma of the body of the pancreas.)

Case 5 (not previously reported): A man 55 years of age was observed July 29, 1941, because of jaundice following cholecystectomy and common duct drainage which had been done elsewhere in September, 1940. The patient had returned to the surgeon in November, 1940, because of chills, fever and jaundice. The common duct then was explored. No stones were found and an anastomosis was made between the common duct and the pylorus. A biliary fistula developed, and material drained from it intermittently. The jaundice cleared for about three months, but with the intermittent cessation of drainage from the fistula, the jaundice deepened progressively, chills and fever occurred and the body weight decreased 35 pounds.

When examined, the patient was deeply jaundiced and the body weight was 140 pounds, but the general condition was fair despite the long illness, probably because of the intermittent drainage of bile. There was a sinus, which was not draining, in the right upper quadrant of the abdomen. The liver was palpable 4 cm. below the costal margin.

The preoperative diagnosis was stricture of the common duct, and at operation stricture of the distal half of the common duct was observed, with dilation of the common duct and of the hepatic ducts above the stricture. The common duct was reconstructed over a rubber tube.

Recovery was satisfactory. There was no external biliary drainage. The patient was dismissed from the hospital on the 19th postoperative day.

On November 3, 1941, chills, fever and progressive jaundice developed. In an x-ray film of the abdomen, it was noted that the tube, which had been placed in the common duct, had passed. Jaundice seemed to fluctuate somewhat in intensity, but the chills and fever continued. The patient was operated upon again and the common duct was re-explored, exploratory duodenotomy was carried out and a tumor of the ampulla was observed. Duodenectomy, cautery resection of the head of the pancreas, pancreatojejunostomy, choledochojejunostomy over a rubber tube splint and posterior gastroenterostomy were done. (The open end of the jejunum was sutured over the severed end of the pancreas.)

The pathologic diagnosis was papillary adenocarcinoma, Grade 1, of the major duodenal papilla. (Figure 3.)

Postoperative drainage of fluid which had the characteristics of pancreatic secretion developed. This was managed by suction and as much as 2,000 cc. of fluid was withdrawn in 24 hours. However, the amount had decreased considerably at the end of two weeks and drainage ceased entirely in four weeks. The patient was dismissed from the hospital on the 18th postoperative day.

The patient remained well until he was hospitalized May 25, 1942, for meningitis. There was a heavy growth of pneumococci, type 29 (Newfeld) on cultures of spinal fluid. Sulfadiazine and sodium sulfadiazine were given and the

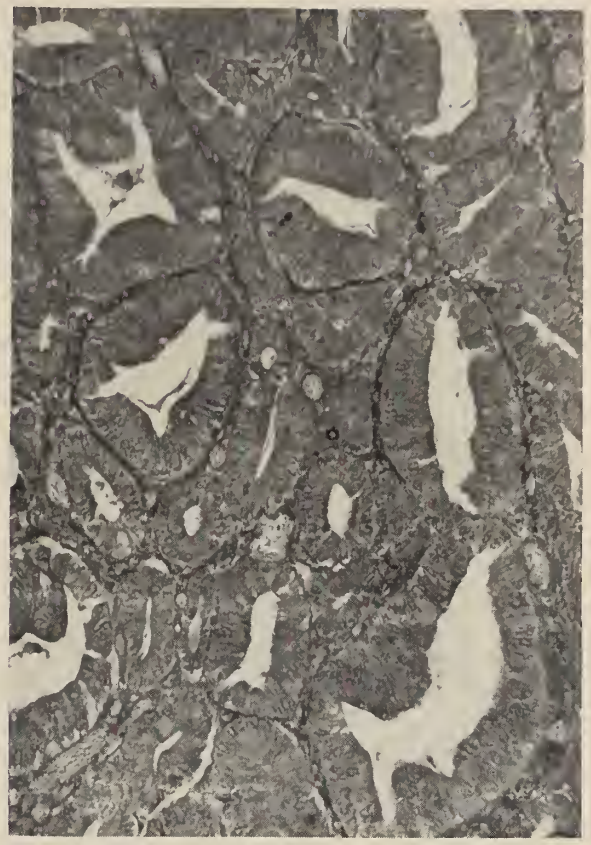

Figure 3.—Photomicrograph of tumor, Case 5.

patient recovered. He was not observed again until December, 1945, and then because of intermittent attacks of chills and fever, pain in the right upper quadrant of the abdomen, and jaundice. There were no palpable abdominal masses and in an x-ray film of the abdomen the rubber tube, which had been placed in the common duct, was observed to be still present. It was advised that the tube be removed surgically because of the probability that jaundice and cholangitis were caused by obstruction of the tube by bile sediment and stony material. Operation was refused and the patient was not observed again until September 6, 1950. In recent months jaundice had been constant, chills and fever frequent and pain and ache in the right upper quadrant of the abdomen increasingly severe. Body weight had decreased 45 pounds and the patient was emaciated and completely incapacitated.

The jaundice was of bronzing type. The liver was hard and tender and could be outlined well below the costal margin. There were no abdominal masses or nodules and no ascites. There was pronounced secondary anemia. The urine contained 2-plus albumin, and bile. In other laboratory data there was evidence of extensive liver damage. The rubber tube was roentgenographically observed to be still present in the right upper abdomen, and there were four shadows of what appeared to be calculi arranged transversely to the left of the tube at the level of the second lumbar vertebra. (Figure 4.)

The preoperative diagnosis was: (1) obstructive jaundice caused by obstruction of the rubber tube by bile sediment and stony material, (2) extensive liver damage and (3) pancreatic calculi.

At operation, dense adhesions involving the colon, the liver, the closed end of the stomach and the old choledocho-

Figure 4.—Retained rubber tube in common duct (Case 5) and pancreatic calculi.

jejunostomy were observed. The liver was enlarged and firm and had the appearance typical of biliary cirrhosis. When the jejunum was exposed the common duct was observed to be dilated and the rubber tube was readily palpable because it was encased in a hard mass of stony material fully four cm. in diameter within the scarred common duct. The distal end of the rubber tube was buried in jejunal mucosa with a minute biliary fistula evidenced by a trickle of bile along the side of the tube. The tube was entirely filled with stony material. The stones in the pancreatic duct were palpable. In exploration of the abdomen, no evidence of tumor was noted.

Jejunotomy, removal of the rubber tube, choledocholithotomy, pancreolithotomy and T-tube drainage of the common duct through jejunostomy were carried out. The jejunum was incised longitudinally distal to the choledochojejunostomy, the rubber tube was exposed at the end and extracted from the common duct and, by means of scoops, 15 grams of stony material was removed from the duct. Irrigation of the duct was productive of more material which was not weighed. A sinus tract into the head of the pancreas was probed and dilated and the four stones were removed from the duct. (Figure 5.) T-tube drainage of the common duct was established by inserting the tube into the jejunum and passing the proximal end of the T well into the common duct. The jejunum was sutured about the long arm of the T, and the tube was brought out through a stab incision.

Postoperatively there was scant flow of watery green bile with offensive odor, and the jaundice increased for the first week. It appeared that the liver was damaged beyond ade-

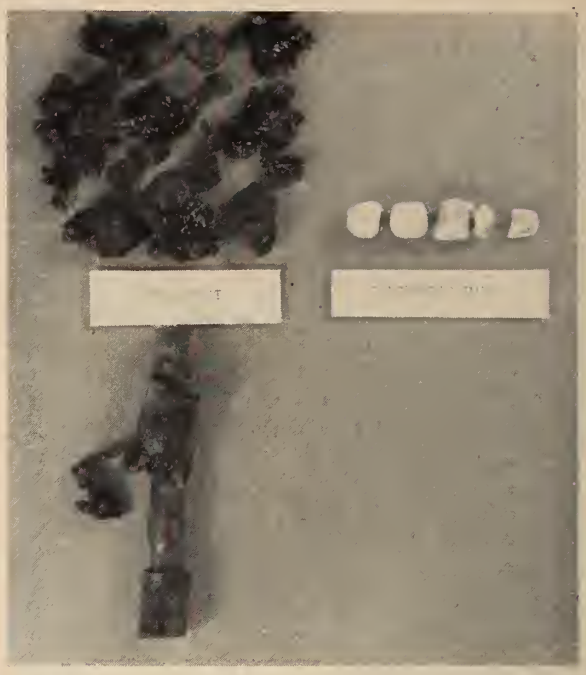

Figure 5.—Photograph of retained common duct splint and common duct and pancreatic calculi removed eight years after Whipple operation (Case 5).

quate function. However, at the end of the first week the daily output of bile began to increase and the jaundice became static. The patient was dismissed from the hospital to a rest home on the eleventh postoperative day. Jaundice fluctuated and recovery was very slow. Irrigation of the T-tube was productive of gravel from time to time, and the character of the bile remained watery and at times purulent. At the end of two months the jaundice had cleared and the patient had gained ten pounds. Eight months after the operation, recovery still was not complete. There was a gain of 25 pounds in body weight, there was no jaundice, chills or fever, the T-tube was clamped most of the time but irrigation of the tube from time to time still was productive of some bile gravel, and the patient occasionally had colic.

DISCUSSION

The original slides of the tumors in the cases reported were reviewed with Dr. James E. Kahler, pathologist, St. Vincent's Hospital, Los Angeles, and with Dr. John W. Budd, pathologist, Los Angeles Tumor Institute, and they concurred in the original diagnoses. While tumors of this type have been called carcinoma of the ampulla, it has been pointed out by others and it is evident from study of the lesions in Cases 3 and 4 that it is often impossible to determine the origin. The tumors in Cases 3 and 4 were almost identical in that they involved the papilla, the ampulla, the common and pancreatic ducts and the wall of the duodenum and invaded the head of the pancreas. Despite the tendency to local invasion, the curability of these lesions, in contrast to that of carcinoma of the head of the pancreas, by the operation of pancreatoduodenectomy is by now well recognized. This contrast is explained by the essential differences in the pathologic nature of the two lesions. Carcinoma of the papilla usually is less malignant, tends to produce

the outstanding symptom of obstructive jaundice earlier, and to metastasize later than does carcinoma of the head of the pancreas. Miller and co-workers[5] observed that the perineural lymphatics of the duodenum, pancreas and common duct were involved by malignant cells in 66.6 per cent of the 27 cases in which radical operation was done for carcinoma of the head of the pancreas and malignant cells were found in the transected end of the common duct in four of the cases. These phenomena were not observed in relation to lesions of the papilla.

With regard to Case 3 it is noteworthy that although the pancreatic duct was ligated, the patient had no digestive or metabolic disturbance. In the immediate postoperative period, drainage of pancreatic secretion and bile developed and suction was applied to the sinus until the 27th postoperative day when the external sinus was packed and the drainage ceased. In order to explain the excellent gastrointestinal function, one might postulate that when the external sinus was packed an internal sinus formed between the pancreas and a defect in the end of the jejunum.

There seems to be no doubt that the tumor causing the intestinal obstruction in Case 4 was a primary lesion of the small bowel. This is consistent with the now not uncommon observation of multiple primary cancers in a person who probably will die eventually of one of them or of another malignant lesion.

The retention of the rubber tube within the common duct in Case 5 was not intended. Normally such tubes pass in a matter of weeks, but no doubt the dense scarring of the duct produced by the three previous operations caused retention in this instance. It is remarkable that the patient lived despite five years of intermittent obstructive jaundice and the associated cholangitis and liver damage. From the postoperative course it was evident that not only was the common duct filled with bile sediment, but that the hepatic ducts and no doubt many of the interlobar ducts contained the same material due to the prolonged obstruction. It is impossible to say how completely the biliary tract will return to normal function or how long it will take to do so.

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REFERENCES

1. Berne, C. J.: Personal communication.

2. Cohn, Roy, Mathewson, Carleton, Jr. and Heaton, Leonard D.: Extension of operability of lesions in the vicinity of the head of the pancreas by the use of the Whipple operation, Stanford Med. Bul. 6, May 1948.

3. Hunt, Verne C.: Surgical management of the ampulla of Vater and of the periampullary portion of the duodenum. Ann. Surg., 114:570-601, Oct. 1941.

4. Mathewson, Carleton, Jr. and Cohn, Roy: Pancreatic cysts simulating carcinoma of the head of the pancreas, Calif. Med., 72, March 1950.

5. Miller, Edward M., Dockerty, Malcolm B., Wolleager, Eric E. and Waugh, John: Carcinoma in the region of the papilla of Vater, Surg., Gyn., Obst., 92:172-182, Feb. 1951.

6. Whipple, Allen O., Parsons, William Barclay and Mullins, Clinton R.: Treatment of carcinoma of the ampulla of Vater, Ann. Surg., 102:763-779. 1935.

Culdoscopy

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SUMMARY

Cul-de-sac puncture for introduction of a culdoscope is easily made with the patient in the knee-chest position. With the use of the instrument, the pelvic organs can be viewed clearly. Culdoscopic examination of 45 patients was carried out. In all cases in which laparotomy was done after the examination, the culdoscopic observations and diagnosis were confirmed. In no case in which tubal pregnancy was present, was the diagnosis missed in culdoscopic examination. Patients were only slightly uncomfortable after the examination. There was no evidence of pelvic peritonitis in any patient, and no pregnant patient aborted as a result of the procedure.

THE culdoscope is an endoscopic instrument for visualization of the female pelvis through the cul-de-sac. It was designed by Decker and Cherry[1] when attempts to visualize the pelvis through the peritoneoscope were unsatisfactory because of intervening bowel and difficulty in isolating the pelvic organs. A special trocar and cannula are necessary to perforate the cul-de-sac for introduction of the culdoscope. The importance of performing the procedure in the knee-chest position to utilize the negative pressure produced to draw air into the abdomen and thus push the bowel out of the pelvis has been repeatedly stressed by Decker,[1, 2] and it is this contribution which makes the examination possible. Several articles have appeared in the literature[1,2,3,4] reporting considerable experience with the instrument and universal agreement that it is valuable in the diagnosis of pelvic disease. No serious complication following the use of the culdoscope has been reported.

Situations in which culdoscopy has proven useful have been listed by several investigators.[1, 2, 3, 4] The procedure has been of value in the diagnosis of tubal pregnancy with or without rupture, in differentiation of acute salpingitis from acute appendicitis, in the diagnosis of endometriosis, chronic salpingitis, and pelvic tuberculosis, and in the study of the tubes and ovaries in cases of infertility. Benign ovarian cysts have been differentiated from malignant neoplasms. The ovaries have been studied in cases in which there was bleeding without apparent organic cause, and in cases of postmenopausal bleeding when examination of material removed by curettement did not satisfactorily explain the bleeding and a non-palpable ovarian neoplasm was considered possible. In some cases in which a diagnosis of functional disease might have been considered on the basis of the atypical nature of pain in the lower abdomen and the absence of evidence of organic cause so far as could be determined by bimanual pelvic examination, minimal chronic salpingitis or early endometriosis was diagnosed culdoscopically. In general the procedure has proven useful in any situation in which it is desirable to know exactly the anatomical appearance of the ovaries, tubes, uterus, and other pelvic structures without resorting to laparotomy.

Contraindications mentioned are the presence of a fixed mass in the cul-de-sac, senile contracture of the vagina, acute vaginitis, and severe debilitating disease which makes it impossible for the patient to assume the knee-chest position.

During the period from September 1949 to June 1950, 47 patients were culdoscopically examined on the clinic service at Stanford University Hospital. In two cases the culdoscope could not be introduced into the cul-de-sac. In one of these cases the cul-de-sac was obscured by adhesions which had followed an appendectomy and bilateral salpingectomy done when the patient was 14 years of age for "ruptured appendix" and "immature tubes." In the other case the patient had a 10 cm. intraligamentary myoma on one side which caused minimal distortion of the cul-de-sac. In 45 cases the culdoscope was introduced into the pelvis without difficulty. Twelve (27 per cent) of the patients had had previous pelvic operation, either appendectomy or adnexal excision. No patient who had had subtotal or total hysterectomy was examined culdoscopically. Most of the patients examined were selected for the procedure because of suspicion of tubal pregnancy with or without rupture, endometriosis, myomata of the uterus, or chronic salpingitis. In a number of cases the culdoscopy was done as a preliminary procedure in patients scheduled for laparotomy the following day in order to gain experience with the instrument and to correlate the appearance of the pelvic structures through the culdoscope with their appearance at laparotomy.

TECHNIQUE

The patients were prepared as for perineal operation. An enema was given only if there were palpable feces in the lower bowel. No special attempt was made to have the bladder empty at the time of culdoscopic examination. The patients were given 0.2 gm. of Nembutal® one and a half hours before the procedure and 20.0 mg. of Pantopon® one-half hour before. A bimanual examination was done shortly before culdoscopy to be certain that no fixed

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mass obscured the cul-de-sac. The patients were placed in the knee-chest position and assisted in maintaining that position by the attending nurse and a member of the resident staff. A supporting device was not necessary with the patient awake. Very few patients had difficulty staying in position when assisted by two helpers, although in many instances the procedure was longer than would be required for a simple diagnosis, because of the interest of several observers in viewing the pelvis through the culdoscope.

A Sims retractor was placed in the posterior vagina and held in place by an assistant. The posterior lip of the cervix was grasped with a single-toothed tenaculum and the mucosa of the posterior vaginal fornix was stretched. The posterior vault was prepared with 1:1,000 aqueous solution of Merthiolate.® and five to eight cubic centimeters of 1 per cent procaine solution was injected into the mucosa of the posterior vault in the midline 1.5 to 2 cm. from the reflection of the posterior vaginal mucosa onto the posterior lip of the cervix. A 1 cm. transverse incision was made with a scalpel through the area of the procaine wheal. The posterior vault was stretched by traction on the Sims retractor and on the cervix, which converted the incision into a rounded hole sufficient for the passage of the trocar and cannula. An attempt was made to confine this incision to the vaginal mucosa, but occasionally the posterior vaginal septum was so thin that air rushed into the pelvis when the incision was made, indicating that the peritoneum of the cul-de-sac had been pierced. The trocar and cannula were pushed through the pelvic peritoneum into the cul-de-sac. The patient usually had a transient uncomfortable sensation as the peritoneum was divided. The trocar then was withdrawn, permitting a rush of air into the abdomen, and this also caused temporary discomfort.

The distal end of the culdoscope was dipped into a warm saline solution, as was suggested by TeLinde and Rutledge,[3] to prevent fogging over from the body heat, and was then inserted through the cannula and the pelvis was inspected. Often when there was much free blood in the pelvis it was necessary to withdraw the instrument and dip it in the saline solution at intervals to keep the lens clean.

When the examination was completed the culdoscope was withdrawn and the cannula was left in place as the patient was slowly turned on her back. Pressure was put upon the abdomen in order to expel as much air as possible through the cannula, which was then removed. There was a minimal amount of bleeding from the posterior colpotomy wound, and suture of the wound was not necessary.

The examinations were done on the gynecological ward in the treatment room and not in the surgery. The patients were spared an operating room fee, and the examination could be done immediately when the occasion arose without regard for operating room schedules. Medical personnel did not wear caps, masks, or gowns. All patients were hospitalized overnight following the procedure, and the majority were dismissed ambulatory within 24 hours.

Among the patients examined culdoscopically were 11 with severe unilateral pelvic pain and an abnormal menstrual history. It could not be determined by bimanual examination whether or not tubal pregnancy without rupture was presented, and the severity of the pain was such that it was considered imperative that a positive diagnosis be made quickly. Only one of these patients had tubal pregnancy. Three patients had chronic salpingitis, five had intra-uterine pregnancy, one had a normal pelvis, and one had old postoperative adhesions. It is reasonable to believe that in some of these cases continued severe pain would have led to unnecessary laparotomy. No hormonal therapy was given to the patients who were pregnant at the time of examination, and neither uterine contractions nor bleeding developed. One of the patients aborted triplets three months after the examination, and another who desired not to be pregnant aborted under suspicious circumstances 40 days after examination. The other three patients delivered normal infants at term.

A sixth pregnant patient was subjected to the procedure in order that an ovarian cyst might be inspected. Laparotomy then was done, in the sixth weeks of gestation, and the cyst, containing the corpus luteum in its wall, was excised. The patient was given progesterone orally and parenterally. There was no tendency to abort, and a normal infant was delivered at term.

Five patients were examined culdoscopically because of severe peritoneal irritation with evidence of intra-abdominal bleeding noted on bimanual examination. Three of them had tubal pregnancy with rupture of the tube. In the other two cases there was rupture of a corpus luteum with bleeding into the pelvis, brisk enough to necessitate laparotomy in one case. In the other, a clot was observed over the corpus luteum, and as no fresh bleeding was noted the patient was kept under observation for two days and then dismissed. The pelvis was normal to palpation three weeks later. Had posterior colpotomy alone been relied upon in this case, the finding of blood in the cul-de-sac would probably have led to a mistaken diagnosis of ruptured tubal pregnancy and to unnecessary laparotomy.

Nine patients had complained of progressive dysmenorrhea which seemed severe enough to suggest the possibility of early endometriosis, although no evidence of it was noted in bimanual examination. In culdoscopic examination, brownish implants in the ovaries were noted in two patients. Two had chronic salpingitis. Five had a normal pelvis.

The culdoscope was used in a variety of other conditions. In a case in which the uterus was perforated during a diagnostic curettage, it was used to determine the position of the perforation and the amount of bleeding. A small ragged laceration in the posterior fundus was observed. It had a small clot over it and there was no fresh bleeding. The patient recovered without incident. One patient

was so obese that several examiners could not make certain by palpation whether or not a pelvic tumor was present. Upon culdoscopic examination, the uterine corpus was observed to be enlarged to four or five times normal size by multiple intramural myomata. One young patient with large subserous myomata who desired to bear children was culdoscopically examined to determine whether the myomata were sufficiently pedunculated that they might be excised without damage to the corpus. The tumors were found to be arising by slender pedicles and were subsequently excised. Two patients with primary amenorrhea were examined with the culdoscope. In one the ovaries were extremely small and white with no evidence of any follicular activity. In the other both ovaries were larger than normal and contained multiple small follicle cysts. Two patients with severe pelvic pain which appeared to be on a psychosomatic basis were culdoscopically examined and no organic disease was noted. A patient with tuberculosis of the endometrium, proven by guinea pig inoculation, was examined with the culdoscope and no evidence of tubercles on the tubes or elsewhere in the pelvis was observed.

DISCUSSION

An attempt was made in the course of this study to evaluate the usefulness of the instrument and to look for any disadvantages. A physician pondering such a procedure might wonder about the difficulty of entering the cul-de-sac; whether the pelvic organs can be clearly seen through the culdoscope; whether puncture of the cul-de-sac through the vagina will introduce infection into the pelvis; whether the postoperative abdominal discomfort following spontaneous pneumoperitoneum can be well controlled; and whether the examination, involving as it does traction on and manipulation of the cervix, will promote abortion in pregnant patients.

As was previously noted, the cul-de-sac was entered on 45 out of 47 attempts. In three patients who, upon examination, were observed to have chronic pelvic inflammatory disease, there was increased thickness and increased vascularity of the posterior vaginal septum. In those cases, introduction of the trocar into the cul-de-sac was more difficult than usual and an increased although not alarming amount of postoperative bleeding was observed.

The pelvic structures were clearly seen through the culdoscope. The uterine corpus and the ovaries were readily visualized and could be studied in minute detail. The tubes tend to hang over the broad ligament, and often pressure in the lower quadrants applied by the culdoscopist or an assistant was necessary to bring the full length of the tubes into view. In only two cases in the series was the appendix seen.

In 27 of the 47 cases, only culdoscopy was done. In five cases dilatation and curettage were carried out after the examination, and in 15 cases laparotomy. Of the 32 patients who did not have laparotomy, only one had febrile response. The patient, who had numerous psychosomatic complaints, refused to drink water after the procedure, and the temperature rose to 38.8° C. the evening after the examination and again the next day. There were no localizing signs or symptoms. The patient was given antibiotics, and the temperature returned to normal on the second day. None of the 31 afebrile patients was given antibiotics. Of the 15 patients who had laparotomy after culdoscopic examination, ten had fever postoperatively. One had urinary tract infection which responded to therapy with sulfa drugs. Four patients had chronic pelvic inflammatory disease and were given penicillin daily. Four patients were given no antibiotics. In none of these cases did the temperature elevation last beyond the second postoperative day. In the tenth patient a massive broad ligament hematoma developed after salpingectomy for ruptured tubal pregnancy. The temperature spiked to 38° C. daily. It was not affected by antibiotics and was still present on the 15th postoperative day. Two months after operation the pelvis was normal to palpation. In none of the 47 cases did the culdoscopic procedure introduce infection into the pelvis, nor was the postoperative course of patients who had abdominal operations affected by the preoperative culdoscopic examination.

Postoperative discomfort from pneumoperitoneum was minimal in most instances, and shoulder pain, when it occurred, was lessened to a great extent by having the patient again assume the knee-chest position, which helped to move the air out from under the diaphragm and back into the pelvis. Spontaneous pneumoperitoneum from passage of air through the posterior colpotomy wound when the patient again assumed the knee-chest position did not occur in this series. Although acetylsalicylic acid and codeine was ordered routinely for relief of postoperative discomfort in the 32 cases in which laparotomy was not done, 20 of the patients did not ask for any analgesic. For the 12 patients who did need postoperative analgesia, one or two codeine tablets sufficed.

1310 Olive Avenue.

REFERENCES

1. Decker, A.: Culdoscopy: Its diagnostic value in pelvic disease, J.A.M.A., 140:378, May 28, 1949.

2. Decker, A., and Cherry, T. H.: Culdoscopy, a new method in the diagnosis of pelvic disease—preliminary report, Am. J. of Surgery, 64:40. April 1944.

3. TeLinde, R. W., and Rutledge, F.: Culdoscopy, a useful gynecologic procedure, Am. J. Obst. & Gyn., 55:102. Jan. 1948.

4. Teton, J. B.: Diagnostic culdoscopy, Am. J. Obst. & Gynec., 60:665, Sept. 1950.

CASE REPORTS

◀ Hypernephroma in an 8-Year-Old Child
◀ The Effect of ACTH in Severe, Recurrent Chorea

Hypernephroma in an 8-Year-Old Child

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As hypernephroma is rare in young persons, and as no report of occurrence in a young child could be found in the literature, the following case is reported.

REPORT OF A CASE

An eight-year-old girl was admitted to the White Memorial Hospital on May 28, 1951, for investigation of mental retardation, and in the course of routine physical examination a mass was palpated in the left flank. The child's mother stated that she had been aware of the mass for three months and that the child had complained of pain in that region during that time. There were no complaints referable to the genito-urinary system.

The patient was thin but appeared to be in good health. The systolic blood pressure was 100 mm. of mercury and the diastolic pressure 88 mm. The mass in the left flank, about 5 cm. in diameter, was moderately tender and freely movable, although it did not move with respiration. No other abnormalities were noted in the physical examination.

The hemoglobin content of the blood was 12.6 gm. per 100 cc. Leukocytes numbered 10,000 per cu. mm. Results of urinalysis were within normal limits. In an excretory urogram the right kidney appeared normal, but the pelvis and calyces of the left kidney were not completely outlined by the contrast medium. There was no evidence of renal enlargement or displacement. A left retrograde pyelogram was made and slight blunting of the lower calyx was observed, but no renal enlargement was noted (Figure 1). The rectum and colon were examined roentgenographically and appeared to be normal. In view of the indeterminate results of pyelography, it was deemed advisable to explore the mass in the left flank transperitoneally.

A left subcostal incision was made, extending from the lateral border of the rectus muscle to the mid-axillary line of the flank. The peritoneal cavity was entered and the mass was palpated in the left retroperitoneal space. It was attached to the lower pole of the left kidney (Figure 2). The peritoneum was then closed and its contents were retracted medially, thereby exposing the mass and the left kidney. The mass, which was approximately 6 cm. in diam-

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Figure 1.—Left retrograde pyelogram showing slight blunting of lower calyx.

Figure 2.—Left kidney with tumor of lower pole.

Figure 3.—Clear cell carcinoma of kidney.

eter, arose from the lower pole of the left kidney and was adherent to the neighboring structures by loose fibrous bands. The capsule of the mass contained many large dilated vessels. Gerota's fascia was incised and the left renal pedicle was exposed. The ureter was clamped, divided and ligated. Three Carmalt clamps were placed on the renal pedicle and it was divided and doubly ligated with No. 1 chromic catgut. The kidney and mass were then mobilized and removed.

The kidney measured 9 by 4.5 by 2.7 cm. and a well encapsulated tumor measuring 6 by 5 by 4 cm. was attached to the lower pole (Figure 2). The histologic diagnosis was clear cell adenocarcinoma of the kidney (Figure 3).

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The Effect of ACTH in Severe, Recurrent Chorea

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INFECTIOUS chorea, commonly called Sydenham's chorea, is the most frequent central nervous system manifestation of rheumatic fever.[3,7] The condition occurs chiefly in children and tends to be self-limited.[9] It is seldom fatal, although in rare instances it may be characterized by rapid, progressive hyperthermia and death.[6]

Recently, a case of unremitting and alarmingly severe infectious chorea in a 22-year-old woman was observed. Because the disease did not respond to ordinary measures and because of its progressive nature, therapeutic trial of adrenocorticotropic hormone (ACTH) was made.

Recent studies have indicated that many of the important manifestations of rheumatic fever are favorably influenced by ACTH or cortisone. Massell and co-workers[4,5] treated two patients with moderately severe chorea with ACTH and reported definite and continued improvement in one, no favorable effect in the other. More recently, Aronson and co-workers[1] reported two cases in which cortisone did not appear to influence the course of chorea. Immediate and lasting response to treatment with ACTH was noted in the case here reported.

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REPORT OF A CASE

A 22-year-old woman entered the University of California Hospital on the neurological service on October 23, 1950, because of severe choreatic movements of the entire body.

The patient's mother reported that the patient had had a similar attack at the age of 13 years. The first episode, which was of sudden onset, was described as being accompanied by fever and by cardiac disturbance of unspecified type. The right side of the body was affected more severely than the left, with uncontrolled movements of the right hand, arm and leg. There was some interference with speech and with swallowing. The patient was placed on a schedule of sedation with phenobarbital, in unknown amount, and rest in bed. In approximately one month she became free of symptoms. Until the present illness, according to the patient and her mother, there had been no sequelae or recurrence.

The present illness started in September 1949, during the sixth month of a second pregnancy. Because of mild but uncontrolled, repetitive motion of the right arm and hand, the patient could not perform fine movements of the hands such as those required for crocheting and writing. During the remainder of pregnancy the neurological symptoms became no worse, and she was able to care for her household without aid. A healthy child was delivered spontaneously at term.

During the following five months, the patient was relatively free of symptoms, except for a feeling of extreme nervousness. In April 1950, severe soreness of the throat developed; 300,000 units of penicillin was given, with apparent recovery after 48 hours. In June 1950, the patient rubbed a blister on the right ankle. The abrasion became infected and red streaks which extended up into the knee appeared on the leg. Penicillin was given in unknown amounts.

At that time the patient noticed that her right hand began to "fly around," and that she was unable to hold objects. By July these movements involved the right arm and leg. During August and September, slurring of speech became apparent. At first, these episodes were intermittent, but they became progressively worse and more frequent, so that the patient had difficulty in eating, doing housework, and caring for her children. During the same period the repetitive movements began to involve the left side of the body, affecting first the arm and then the leg. In October, the patient noticed that it was becoming extremely difficult to swallow. By this time the movements of the body had become so violent that she was unable to care for her personal needs.

Upon examination on October 23, 1950, it was noted that the movements were choreatic in form and character, and they were of such extreme violence that immediate hospitalization was necessary to ensure adequate nursing care.

The patient was observed to be poorly nourished, as was evidenced by obvious loss of weight and dry skin. There were many bruises over the face, arms, legs and torso. The temperature and blood pressure were normal. A Grade II systolic murmur which was transmitted weakly to the left axilla was heard at the apex of the heart. Medial to the apex impulse, a prominent third heart sound was audible. No other physical abnormalities were noted.

In neurological examination, choreatic movements of the entire body—violent, uncontrolled and purposeless twisting—more pronounced on the right side than on the left, were noted. There was pronounced impairment of speech, and the patient was unable to swallow. No other neurological abnormalities were noted.

The patient was placed in a padded bed and was fed parenterally, either by intravenous infusion or by intubation.

Paraldehyde in doses of 8 cc. every three hours provided only a minimal amount of rest; between doses it was necessary to give phenobarbital sodium intramuscularly in doses of 0.13 gm. Although the dosage of paraldehyde was increased gradually from 8 cc. to 15 cc. every three hours, the patient had relief for periods of no longer than an hour and a half during the first three days in hospital. To supplement the paraldehyde, a 10 per cent solution of chloral hydrate was given intramuscularly in 10 cc. doses. In spite of this, the condition of the patient continued to grow worse. By October 26, the choreatic movements had increased to such severity that she was literally beating herself to death, and increasing mental deterioration was noted. It was the consensus of the staff of the neurological service that without new and drastic therapy the illness would lead rapidly to exhaustion and death.

Because of the reports on the use of ACTH in the treatment of rheumatic fever, it was decided that therapeutic trial of the hormone was warranted. The initial dose was injected on October 26, and the total in each 24 hours was 80 mg., given in four doses of 20 mg. each. This schedule was continued for five days.

During the first 24 hours of administration of ACTH, the patient became quieter and more manageable and needed less attention from the special duty nurse. Sedatives gave her longer periods of rest; it was necessary to administer them only twice in the 24-hour period. During the next 12 hours the patient improved dramatically. She was able to speak intelligibly, to swallow fluids and solids, and to write, put on lipstick and comb her hair.

By the sixth day the patient could crochet—for the first time in a year. She was returned to the ward, where only routine nursing care was given. The dosage of ACTH was reduced to 60 mg. each 24 hours, given in three divided doses of 20 mg. each. After six days on this dosage, the amount of ACTH was reduced to 25 mg. each 24 hours. Improvement, both physical and mental, continued and at the end of three more days all medication was stopped. When chorea did not recur in the next four days, the patient was discharged.

Examined periodically in the out-patient department, the patient when last observed, February 19, 1951, had had no recurrence of chorea. Only mild restlessness of the right hand, which caused no functional impairment, remained. There was no change in the sounds at the apex of the heart, which were coincident with mitral insufficiency.

Results of laboratory studies performed before, during, and following administration of ACTH were as follows: The erythrocyte sedimentation rate (Wintrobe) was abnormally rapid before treatment (36 mm. in one hour) but returned to normal (15 mm. in one hour) during therapy. Antistreptolysin titer was at a level (333 Todd units) consistent with an antecedent streptococcal infection and was not changed by ACTH. The cerebrospinal fluid was normal except in one respect: The concentration of ascorbic acid was initially low (1.34 mg. per 100 cc.) but increased gradually to the normal range (2.1 mg.). The significance of this change is uncertain. The results of electrophoretic analysis of the serum proteins were of particular interest and will be the subject of a subsequent report.

The response to ACTH was followed by a significant drop in the quantitative eosinophil count. Results of complete counts of blood cells and of urinalysis were within normal limits at all times. Determination of serum electrolytes revealed no evidence of alkalosis. Studies of the blood sugar, serum protein and albumin-globulin ratio, and creatinine clearance showed no changes. No unusual organisms were noted in bacteriological studies of smears and cultures of the throat and of urine sediment.

X-ray films of the chest, heart, left hand, and the skull, and Water's views of the sinus revealed no evidence of disease.

In an electroencephalogram there were "borderline findings of slightly abnormal character [that] could be found in about 15 per cent of normal individuals . . ." No abnormalities were observed in two electrocardiograms.

DISCUSSION

In view of the well known variability of infectious chorea, it is possible that spontaneous remission coincided with the administration of ACTH. The evidence against this supposition, however, is overwhelming.

Recurrent infectious chorea runs a more prolonged course when it is associated with pregnancy. The average duration of chorea is one month, in contrast to an average duration of 3.3 months when it occurs in conjunction with pregnancy.[8] In the case here reported, the disease was unremitting and progressive for five months. It became alarmingly severe during the last month and despite maximum supportive therapy during hospitalization, the patient was near exhaustion. The disease was still in the ascendancy when ACTH was first administered. The promptness of improvement following the use of ACTH strongly suggested therapeutic response rather than spontaneous change.

Since the pathological process in chorea, regardless of its severity, is exudative rather than proliferative in character,[2] potentially the disease is completely reversible. For this reason the use of ACTH (or cortisone) appears to be indicated in the treatment of cases of infectious chorea. It is possible that ACTH will shorten the course of the disease and prevent death by favorably altering the exudative reaction in the brain. Final judgment regarding the practical and fundamental value of ACTH (or cortisone) in the treatment of chorea will be forthcoming only after careful study of a representative series of cases.

REFERENCES

1. Aronson, M., Douglas, H. S., and Lewis, J. M.: Cortisone in Sydenham's chorea, J.A.M.A., 145:30, Jan. 6, 1951.

2. Greenfield, J. G., and Wolfsohn, J. M.: Pathology of Sydenham's chorea, Lancet, 2:603, 1922.

3. Jones, T. D., and Bland, E. F.: Clinical significance of chorea as a manifestation of rheumatic fever, J.A.M.A., 105: 571, Aug. 24, 1935.

4. Massell, B. F., Warren, J. E., Sturgis, G. P., Hall, B., and Craige, E.: The clinical response of rheumatic fever and acute carditis to ACTH, New England J. Med., 242:641, April 27; 692, May 4, 1950.

5. Massell, B. F., and Warren, J. E.: Effect of ACTH on rheumatic fever and rheumatic carditis, J.A.M.A., 144-1335, Dec. 16, 1950.

6. Schwartzman, J., MacDonald, D. H., and Perrillo, L.: Sydenham's chorea; report of 140 cases and review of recent literature, Arch. Pediat., 65:6, Jan. 1948.

7. Sutton, L. P., and Dodge, K. G.: The relation of Sydenham's chorea to other rheumatic manifestations, Am. J. Med. Sc., 195:656, May 1938.

8. Willson, P., and Preece, A.: Chorea gravidarum: study of 951 collected cases, Arch. Int. Med., 49:471; 671, March-April 1932.

9. Wilson, M. G.: Rheumatic Fever. Studies in the Epidemiology, Manifestations, Diagnosis and Treatment of the Disease During the First Three Decades, Oxford, Commonwealth Fund, 1940, p. 197.

California MEDICINE

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For Information on Preparation of Manuscript, See Advertising Page 2

EDITORIALS

A New Problem for C.P.S.

California newspapers blasted out in righteous indignation late last month when they discovered, via *Time* magazine, that a few physician members of California Physicians' Service had been apprehended in calculated plans to withdraw from C.P.S. funds more than they were rightfully entitled to. The *Time* story, in turn, was taken from an editorial, "Robbing Peter to Pay Paul," that appeared in the March 6, 1952, issue of the *Bulletin* of the Los Angeles County Medical Association.

Thus a sincere attempt to clear up a sore spot within the confines of the medical family broke into public print, with overtones not too flattering to the medical profession. The ordinary machinery of the county and state organizations, capable of dealing with a problem of this nature, was interrupted in its normal procedure.

Many physicians have since asked themselves what profits it if they adhere to an organization of their own making, with a vast potential for economic and legislative good, if some of their fellows make that organization a private province for their own financial gain. The question comes naturally and deserves an answer.

The answer lies in the fact that C.P.S. has awakened to a realization that some of its professional members have not shot square; once that fact is established, the remedy is obvious. Publicity within the ranks of the profession itself, in this case through a county society bulletin, is bound to have a salutary effect on some of the erring brothers. More stringent remedies are available if that one does not work effectively. Meanwhile, it should be pointed out that the financial loss, if any, is on the shoulders of the other professional members of C.P.S., not those of the public. Where a small number of physicians take it upon themselves to raid a pooled fund, there is that much less left in the fund to pay the vastly larger number of participating doctors who bill honestly for their services. Ergo, a reduced unit value.

Certainly, in the course of the investigation that C.P.S. undertook nearly a year ago, with the knowledge and consent of the C.M.A., cases will be uncovered where there is overcharging because of ignorance of procedures or a lack of study of the proper way to assemble a statement under the C.P.S. program. Clerical errors may account for additional cases. These are subject to clarification and adjustment.

In the other cases, the few where flagrant abuses amounting to outright dishonesty are disclosed, the county medical societies and subsequently perhaps governmental authorities may see fit to take active steps. We need not list here the various punishments or penalties that might be imposed; suffice it to say that physicians guilty of such conduct cannot expect to have the charges lightly dismissed. Under all the rules of the game, including the law, the principles of medical ethics and the rules of common sense and fair play, those guilty of such abuses should be brought to the proper bar of justice, preferably by their fellow practitioners.

The Annual Session

Soon the 1952 Annual Session of the California Medical Association will convene in Los Angeles. Members of the Association and their guests will again be able to concentrate in a few days' time a real postgraduate course which is not easily produced and is seldom matched.

This year the meeting will honor an outstanding list of guest speakers, will house the largest number of technical and scientific exhibits ever assembled by the C.M.A. and will welcome what promises to be the largest registration in the organization's history.

In pride mixed with rue it must be reported that the Association's annual meetings have now grown to the size where it is becoming increasingly difficult to find quarters adequate to house them. Still, hotel accommodations are available and all are welcome.

Letters to the Editor . . .

Dangers of Cure-Alls: Multiple Vitamin Mixtures in Pernicious Anemia

In the past, the development of neurological symptoms in pernicious anemia prior to anemia has been unusual. However, Conley and Krevans[1] observed that five out of ten patients with previously unrecognized pernicious anemia observed at Johns Hopkins Hospital in the year 1950 complained only of the neurological symptoms and had little or no anemia. Investigation revealed that each patient had been taking multivitamin preparations. In four of the five it was possible to identify the preparation used, and in each there was enough folic acid to produce a hematologic remission in patients with pernicious anemia.

A survey of proprietary vitamin products widely available as of January 1951 revealed that more than 80 contained folic acid despite the relatively limited occurrence of folic acid deficiency states. The recommended dose of these preparations was sufficient to supply at least 5 mg. of folic acid daily—enough to maintain prolonged hematologic remission in pernicious anemia.[2] On the other hand, although the blood of persons with pernicious anemia who are taking such vitamin complexes may remain normal, subacute combined degeneration[3] may develop progressively.

The *Journal of the American Medical Association* in a recent editorial[4] emphasized the danger of masking pernicious anemia through the use of such multivitamin preparations containing folic acid. Since there is a growing tendency on the part of some manufacturing pharmacists to offer a variety of multiple mixtures as a cure-all for a host of ills, in the future physicians may expect to see a number of variants of diseases which are due to one or another masked deficiency.

Edgar Wayburn, M.D.
San Francisco

REFERENCES

1. Conley, C. L., and Krevans, J. R.: Development of neurologic manifestation of pernicious anemia during multivitamin therapy, New England Journal of Medicine, 245: 529, Feb. 1951.

2. Bethell, F. H., et al.: Further studies on utilization of pteroyl hexaglutamyl glutamic acid (vitamin Bc conjugate) in pernicious anemia, J. Lab. & Clin. Med., 32:337, 1947.

3. Vilter, C. F., Vilter, R. W., and Spies: Treatment of pernicious and related anemias with synthetic folic acid, J. Lab. and Clin. Med., 32:262, 1947.

4. Journal of the American Medical Association, 148:57, Jan. 5, 1952.

Cultures for Diagnosis of Diphtheria

I believe that it might be appropriate to suggest to the profession a warning regarding reliance upon throat cultures as a dependable means for the diagnosis of diphtheria under conditions which now exist.

Within the memory of many present-day physicians diphtheria was a constant threat and throat cultures were routine in every case of tonsillitis with or without exudate. Because of almost universal immunization, children are now protected by their own artificially induced immunity and additionally are protected by the immunity of those with whom they are in contact. Adults are similarly protected by diminution in the possibilities of exposure even though they are not themselves immune to the infection. Infectious mononucleosis and other infections of the throat which may simulate diphtheria have accordingly become much commoner than diphtheria and the physician is no longer alert to diphtheria as an ever-present menace.

The history of this disease, however, is one of periodic alterations in prevalence, and the future will doubtless see challenge to the immune state of those subjected to immunizing injections and to that of adults who have not been given such protection.

The especial warning applies to the fact that diphtheria is no longer suspected by the clinician at the onset of many throat infections, and in many cases, as judged by the experience in a communicable disease hospital, throat cultures will first be employed only after the patient has received one or more injections of penicillin. Penicillin is not an effective agent in the treatment of diphtheria; antitoxin is the only acceptable means of therapy. Nevertheless, experience in the treatment of the carrier state indicates that the growth of diphtheria bacilli on culture from the throat may be completely inhibited by injections of this antibiotic. Accordingly reliance upon throat cultures for the diagnosis of diphtheria necessitates that cultures be taken before any antibiotic agent is given to the patient. At the moment the problem does not seem to be of serious proportions but if the natural history of the disease is repeated in the near or distant future, it will be readily possible for many cases of diphtheria to escape detection until clinical symptoms have reached a dangerous level unless material for culture is taken from the throat before the administration of antibiotic drugs.

E. B. Shaw, M.D.
San Francisco

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NOTICES AND REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 388th Meeting of the Council, San Francisco, February 10, 1952.

The meeting was called to order by Chairman Shipman at 9:30 a.m., Sunday, February 10, 1952, in Room 220 of the St. Francis Hotel, San Francisco.

Roll Call:

Present were President MacLean, President-elect Alesen, Speaker Charnock, Councilors West, Loos, Sampson, Morrison, Dau, Montgomery, Lum, Green, Pollock, Frees, Heron, Thompson, Shipman and Varden, and Secretary Daniels.

Absent for cause: Councilors Ray and Bailey, Editor Wilbur.

A quorum present and acting.

Present by invitation during all or a part of the meeting were Vice-Speaker Randel, Drs. Russel V. Lee, Malcolm Merrill of the State Department of Health, Francis J. Cox; John F. Ellis and George W. Garner of Kern County; Executive Secretary Hunton, Assistant Executive Secretary Thomas, Legal Counsel Hassard, Messrs. Ed Clancy, J. L. Pettis and Glenn W. Gillette of public relations staff; Dr. Francis Hodges and Messrs. W. M. Bowman and John McMahon of California Physicians' Service; Messrs. Clem Whitaker Jr. and Ned Burman of public relations counsel; Mr. Ben H. Read, executive secretary of the Public Health League of California; county society executive secretaries Venables of Kern, Cochems of Los Angeles, Bannister of Orange, Kihm of San Francisco, Wood of San Mateo, and Nute of San Diego; Mr. K. L. Hamman of California Physicians' Service and Dr. Chad M. Harwood, secretary of the Orange County Medical Association.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 387th Council meeting, held December 1-2, 1951, were approved.

2. *Membership:*

(a) On motion duly made and seconded, one member whose 1951 dues had been received since the last Council meeting was reinstated.

(b) A report of membership as of February 8, 1952, was received and ordered filed.

(c) On motion duly made and seconded in each instance, four applicants were elected to Retired Membership. These were:

Rene Bine, Gordon E. Hein, Joseph L. McCool, all of San Francisco County; Ione Pinney, San Joaquin County.

(d) On motion duly made and seconded in each instance, eleven applicants were elected to Associate Membership. These were:

Barbara E. Dittmann, Alameda-Contra Costa; W. C. Buss, Kern County; Emma Wharton, Orange County; Roy N. Taylor, Riverside County; Evelyn Ballard, Charles F. Drake, Felix O. Kolb, Lester A. Mallette, Kenneth Poppen, Olga Rosasco-Loos, San Francisco County; Freeman H. Adams, San Joaquin County.

(e) On motion duly made and seconded in each instance, reductions of dues because of illness or postgraduate studies were voted for ten applicants.

3. *Financial:*

(a) A report of bank balances as of February 8, 1952, was received and ordered filed.

(b) A report of income and expenditures for January and for the seven months ended January 31, 1952, was received and ordered filed.

(c) A request of the American Medical Education Foundation for a contribution from the Association was read and discussed. It was regularly moved and seconded that the American Medical Education Foundation be advised that California would do its share in the national campaign, through either individual or association subscriptions. An amendment to the motion was regularly moved and seconded, calling for the appointment of a committee to handle the solicitation of subscriptions in California, and the amendment was adopted. On vote, the motion as amended was adopted.

(d) A request from the Woman's Auxiliary for the appropriation of an additional $1,000 to help

meet the annual meeting expenses of the Auxiliary was read and discussed. On motion regularly made and seconded, an appropriation of an additional $1,000 to the Woman's Auxiliary was voted, the roll call showing more than a three-fourths favorable vote.

4. *State Department of Public Health:*

Dr. Malcolm Merrill, Acting Director of the State Department of Public Health, reported on recent changes in personnel in the health departments in San Francisco, Alameda, Mendocino and Imperial counties. Among these changes is the appointment of Dr. Clarence R. Kroeger, formerly of Imperial County, as health officer of Mendocino County, in accordance with recommendations made in a recent health resource study in that county.

Dr. Merrill also reported on the production of preliminary regulations to govern laboratories using animals in research. He also reported on revisions being made in regulations of the Crippled Children's Act and the Clinical Laboratories Act. He stated that there was some indication that federal funds to his department would be decreased somewhat in the 1952-53 fiscal year and that the state health budget would be essentially unchanged from the present figures.

In response to questions, Dr. Merrill stated that state funds for aid in hospital construction would probably amount to about 50 to 60 per cent of federal funds, which are now estimated at about $2,500,000 for the coming fiscal year. On another question he stated that the names of patients were required in reports of the tumor registry for purposes of eliminating duplications and for checking against mortality records. Some 92,000 names are now on the tumor registry, dating back to 1942, and about 12,000 new cases are added each year. These records are confidential.

Dr. Merrill reported that two items of proposed legislation are being prepared for the 1953 legislative session. One of these would consider the revision of rabies control measures in order to secure a more uniform system of rabies control. The other would be in response to a resolution of the California Conference of Local Health Officers, asking for standardized requirements for milk pasteurization.

Dr. C. V. Thompson reported on a meeting with a committee of the California Conference of Local Health Officers, at which problems relating to rabies control, to the use of silver nitrate or other preparations in the eyes of the newborn and to tetanus control, were discussed. On motion duly made and seconded, it was voted to appoint a committee to study these problems.

5. *California Physicians' Service:*

Dr. Francis T. Hodges, secretary of California Physicians' Service, reported on current activities of C.P.S., including its own internal business study and its cooperation with C.M.A. committees studying its character and its fee schedule. A new physician's manual and a new hospital manual have been issued, with complete instructions on the handling of C.P.S. claims.

6. *District Hospitals:*

Drs. Ellis and Garner of the Kern County Medical Society detailed to the Council the progress of a hospital district in their county, with its financing difficulties and its organizational set-up. They reported on several items in the existing hospital district statutes which they felt should be amended for clarity and left proposed amendments on these points. On motion duly made and seconded, it was voted to refer these proposals to the Committee on Public Policy and Legislation.

7. *Disciplinary Action:*

At the request of the Alameda-Contra Costa Medical Association and on motion duly made and seconded, it was voted to appoint Mr. Arthur H. Connolly, Jr., as referee to conduct hearings on charges of unprofessional conduct against a member of that association.

8. *1952 Annual Session:*

(a) Dr. Daniels requested that the second meeting of the House of Delegates at the 1952 Annual Session be held at 1:30 p.m. instead of a morning hour, and on motion duly made and seconded, this change was approved.

On motion duly made and seconded, the list of guest speakers for the Annual Session was approved.

Dr. Charnock, Speaker of the House of Delegates, suggested the possibility of eliminating the vocal roll call in the interest of saving time. It was agreed to mail advance registration cards to Delegates and Alternates as a means of speeding this process.

(b) Mr. Hunton reported on the difficulties encountered in securing adequate accommodations for the Annual Session and he was authorized to carry on advance negotiations for meeting places in 1953 and 1954.

9. *Industrial Fee Schedule:*

Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission, discussed the draft of a proposed fee schedule drawn up by his committee. After discussion, it was regularly moved, seconded and voted that the schedule as drawn be approved as a work sheet and the committee be instructed to carry on this work.

10. *Foreign Medical Students:*

Dr. Francis Scott Smyth, Dean of the University of California School of Medicine, reported on difficulties faced by medical schools in accepting foreign students for postdoctorate training. He presented proposed legislation which would control such training within desired limits without creating problems reflecting adversely on the countries from which such students come. On motion duly made and seconded, the intent of such legislation was approved.

Dr. Smyth also discussed some problems relating to extension courses for other professional groups and urged that attention be paid to the progress of such groups.

11. *Student A.M.A.:*

Dr. Charnock reported on the attendance of five California medical students at the December 27-28 meeting of the Student A.M.A. Representatives of all California schools except Stanford participated and expressed their thanks to the C.M.A. for having financed their trips.

12. *Legal Department:*

Mr. Hassard reported that oral arguments in the San Diego case had consumed more than three days. He discussed the issues in the case and reported that costs to date had been more than the initial appropriation. On motion duly made and seconded, it was voted to appropriate an additional $4,500 to meet current costs of the case, the roll call showing more than a three-fourths affirmative vote.

Mr. Hassard also reviewed the history of the Hospital District Act and its amendments and discussed the recent opinion of the Attorney General in the Merced General Hospital case.

13. *Advisory Planning Committee:*

Mr. Hunton reported that the Advisory Planning Committee had met on February 8 and had discussed the current public relations program. The committee decided to retain Mr. Ken Young, now assistant executive secretary of Los Angeles County Medical Association, as a member and had voted to request the Council to appoint Mr. Everett Bannister, executive secretary of the Orange County Medical Association, as a member. On motion duly made and seconded, Mr. Bannister was elected to membership.

Mr. Hunton also reported that an offering of a public relations plaque for physicians' offices would be made to all members of the Association.

14. *Public Relations:*

Mr. Clem Whitaker, Jr., reported on current political activities and sugested that a radio broadcast of the inaugural address of the 1952 incoming C.M.A. president be made statewide. On motion duly made and seconded, it was voted to approve this broadcast.

15. *Public Policy and Legislation:*

Mr. Ben Read urged that interest be taken in the June primary and the November general elections and stressed the importance of maintaining contact with the interim committees of the State Legislature. Mr. J. L. Pettis reported on his recent visit to Honolulu, where he addressed two large groups.

16. *California Medicine:*

A proposal that CALIFORNIA MEDICINE carry as a supplement a series of articles produced in another state was discussed and it was regularly moved, seconded and voted to disapprove this proposal.

17. *Catastrophic Insurance:*

Dr. MacLean discussed a letter sent to him by Dr. John W. Cline in which the suggestion was made that a committee be appointed to discuss with insurance underwriters the possibility of writing catastrophic health insurance coverage. On motion duly made and seconded, this matter was voted referred to the insurance committee headed by Dr. Lum.

18. *Membership Provisions:*

Dr. West discussed the case of a county society member who wished to remain a county society member but not affiliate with the American Medical Association or the C.M.A. It was agreed that legal counsel should draft a by-law amendment which would spell out the present implied requirement that active members of county medical societies must maintain simultaneous membership with the state and national organizations.

19. *Time and Place of Next Meeting:*

The chairman announced that the next meeting of the Council would be held in Los Angeles on April 26, 1952.

Adjournment:

On motion duly made and seconded, the meeting was adjourned in memory of Dr. John D. Ball, deceased Councilor from the Second Councilor District, with a message of sympathy to be forwarded to Mrs. Ball.

SIDNEY J. SHIPMAN, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

ARMEN, GARO H. Died in Los Angeles, February 6, 1952, aged 73. Graduate of George Washington University School of Medicine, Washington, D. C., 1905. Licensed in California in 1924. Dr. Armen was a retired member of the Los Angeles County Medical Association and the California Medical Association, and a Fellow of the American Medical Association.

✤

BURNHAM, CLARK J. Died in Berkeley, February 15, 1952, aged 83, of cerebral hemorrhage. Graduate of the University of California Medical School, Berkeley-San Francisco, 1891. Licensed in California in 1892. Dr. Burnham was a retired member of the Alameda-Contra Costa Medical Association, and the California Medical Association, and an Associate Fellow of the American Medical Association.

✤

FRANDY, MERVYN F. Died in Oakland, February 17, 1952, aged 57. Graduate of the University of California Medical School, Berkeley-San Francisco, 1920. Licensed in California in 1920. Dr. Frandy was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

KIGER, WILLIAM H. Died in Los Angeles, February 10, 1952, aged 75. Graduate of Toledo Medical College, Ohio, 1900. Licensed in California in 1901. Dr. Kiger was a mem-

ber of the Los Angeles County Medical Association, a life member of the California Medical Association, and a Fellow of the American Medical Association.

✣

Prince, Russell W. Died in San Bernardino, November 27, 1951, aged 67, of acute coronary thrombosis. Graduate of the California Eclectic Medical College, Los Angeles, 1916. Licensed in California in 1916. Dr. Prince was a member of the San Bernardino County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✣

Snedaker, Jr., John F. Died in an airplane accident in Idaho, October 19, 1951, aged 55. Graduate of Columbia University College of Physicians and Surgeons, New York, 1923. Licensed in California in 1926. Dr. Snedaker was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Stibbens, Frank H. Died in Oakland, February 13, 1952, aged 73. Graduate of Cooper Medical College, San Francisco, 1903. Licensed in California in 1904. Dr. Stibbens was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✣

Wald, Ernest E. Died in San Francisco, September 9, 1951, aged 52. Graduate of Ludwig-Maximilians-Universität, Medizinische Fakultät, München, Bavaria, Germany, 1923. Licensed in California in 1941. Dr. Wald was a member of the San Francisco Medical Association, the California Medical Association, and the American Medical Association.

Correction

The second meeting of the House of Delegates at the Annual Session of the California Medical Association is scheduled for Tuesday, April 29, at 1:30 p.m.—not at 9:30 a.m. as printed on page 183 of the March issue of California Medicine.

Questions and Answers about C. P. S.

Question: Are Spanish-American War veterans required to pay for medication, or can their prescriptions be filled at government expense as are those of other classes of eligible veterans?

Answer: Veterans Administration regulations governing the out-patient prescription program do not exclude any class of eligible veterans. Therefore, Spanish-American War veterans are entitled to have prescriptions filled at government expense (i.e., either through a member drug store of the California Pharmaceutical Association or at a VA regional office pharmacy).

Question: If C.P.S. rejects a physician's claim because the services rendered are not covered by the patient's C.P.S. contract, is the patient then fully responsible for payment of such services?

Answer: Yes. All C.P.S. members are responsible for all services which are not benefits of their contracts.

The avoidance of this or other types of incorrect billing is preferable, from all points of view, to later correction. Some of the methods used by C.P.S. to prevent incorrect billing are: (1) Supplying information to members about services that are, and are not, covered by their contracts; (2) utilizing the C.P.S. Physician Relations Department to inform and instruct physicians' nurses and secretaries about C.P.S. billing and contracts; (3) the Physician's Manual, which describes benefits of C.P.S. contracts in relation to code number which appears on membership cards; the telephone answering section of the Medical Department (in C.P.S. offices in San Francisco and Los Angeles) which serves as a source of immediate information regarding contracts, benefits, exclusions, etc., for physicians and hospitals.

Question: If a member's income is less than the C.P.S. income ceiling, does the income clause apply even for services which are not covered by his contract; or may the physician charge his private fee?

Answer: The income clause is an integral part of every C.P.S. member's contract, but its application does not extend beyond the provisions of the contract. Services not covered by a member's contract are not affected by the income clause. Therefore, in the instance cited by the question, the physician may charge his private fee.

Question: If I perform surgical operation on a C.P.S. patient who does not have medical coverage, does the fee I receive from C.P.S. for the surgical procedure cover preoperative medical services and surgical consultations which preceded operation?

Answer: No. Benefits under the C.P.S. surgical contract commence from *the time actual operation is performed,* and do not include medical services which may have preceded operation. The member, not having medical coverage, would be responsible for such services.

Question: How long, on the average, does it take C.P.S. to process and pay a physician's bill?

Answer: If the bill is received by the C.P.S. Medical Department by the fifteenth of the month, it will normally be paid by the tenth of the following month. Delays may occur, however, in cases of treatment for accidental injury or when a billing form does not provide sufficient information and the physician must be contacted.

Question: Why does it take C.P.S. longer to make payment on an accident case than on other cases?

Answer: There is necessarily a slight delay in payment on accident cases, perhaps a few weeks, because of the possibility of third party liability in the accident.

If C.P.S. finds, upon investigation, that there is no third party liability, payment is made without further delay. If the possibility of third party liability exists, payment is made if and when C.P.S. obtains a signed statement from the member, stating that C.P.S. will be reimbursed when the third party makes financial settlement with the member. The physician, meanwhile, is advised of steps being taken by C.P.S. and of pertinent legal aspects of the case which are of interest to him. If, ultimately, the third party liability is denied as the result of legal or other action, the physician is assured of payment from C.P.S. in accordance with the member's contract and the C.P.S. Fee Schedule.

Question: Is it the physician's responsibility to find out if a patient belongs to C.P.S., or is it the patient's responsibility to make this fact known?

Answer: It is the patient's responsibility, and he should do it at the time of the first visit. Under strict interpretation of C.P.S. contracts, the member is not entitled to contract benefits if he does not make his C.P.S. membership known. However, physicians and their nurses, secretaries and receptionists can help avoid such situations (and contribute to good doctor-patient relationships) by asking new patients, "Do you have any form of health insurance?" or some similar question. The C.P.S. Physician Member plaque (carrying the words "please present your card during first visit") also should be placed where it will be seen and be a reminder to patients.

NEWS and NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

Grants in support of research being carried on by faculty members of two Southern California medical schools were announced recently by the John and Mary R. Markle Foundation. One was awarded to the University of California School of Medicine, Los Angeles, to support work in parasitology and tropical medicine by Dr. Edward K. Markell, assistant professor of infectious diseases; and the other to the University of Southern California School of Medicine for work in pediatrics and hematology by Dr. Phillip Sturgeon, assistant professor of pediatrics. The awards are $6,000 a year for a five-year period.

* * *

Dr. Robert R. Commons, assistant clinical professor of medicine at University of Southern California School of Medicine, was elected chairman of the Western Section of the American Federation of Clinical Research at the annual meeting at Carmel in January.

* * *

The Medical Women's Society of Los Angeles County has extended an invitation to the **visiting women physicians** of the California Medical Association to an informal hour from 4 to 6 p.m. on Sunday, April 27, Biltmore Hotel.

* * *

The California Society of Allergy will hold a reception and dinner Tuesday evening, April 29, in Conference Room 8 of the Biltmore Hotel, Los Angeles, and a luncheon meeting at noon the following day. Reservations may be made with Dr. Elizabeth A. Sirmay, 133 South Lasky Drive, Beverly Hills. Telephone: CRestview 5-5351, extension 226.

* * *

Dr. A. J. Carlson will be the principal speaker at a regional conference in observance of National Social Hygiene Day, April 23, in Los Angeles. He will discuss the question, "Can syphilis and gonorrhea be eliminated from the human race?" Dr. Carlson is professor emeritus of physiology at the University of Chicago and an honorary vice-president of the American Social Hygiene Association, which with the VD Council of the City and County of Los Angeles is sponsoring the meeting.

SACRAMENTO

The annual convention of the **California Dietetic Association** will be held on May 22, 23 and the morning of the 24th at the Hotel El Rancho, Sacramento. The program will present sections on public relations, diet therapy, food administration, school lunch, nutrition, and other topics of interest to dietitians and those in allied professions. Registration fee is $1.50 for the three-day session. Non-members are welcome to attend all general sessions.

SAN FRANCISCO

Dr. Anthony J. J. Rourke, superintendent of Stanford University Hospitals, soon will leave that post to become executive director of the Hospital Council of Greater New York. Dr. Rourke, who will take over his new duties July 1, 1952, is this year's president of the American Hospital Association.

The purpose of the organization which Dr. Rourke is to serve is to aid in the coordination and improvement of hospital and health services in New York City and to plan the development of those services in relation to community needs.

* * *

One of the two remaining lectures in the Stanford University School of Medicine **popular medical lectures** will be given April 23, and the other May 7. On the earlier date Dr. Anthony J. J. Rourke will talk on "The Age of Medical Miracles," and on May 7 Dr. Lyman M. Stowe will discuss "Natural Childbirth—What It Is and What It Isn't." Both lectures are to be given at Lane Hall at 8 p.m.

GENERAL

The Foundation of **The American Society of Plastic and Reconstructive Surgery** has offered awards in junior and senior classifications for the best original essays in this field.

Awards in the junior classification (residents and surgeons who have practiced in the field not more than five years) are two six-month scholarships in leading plastic surgery services in the United States, England and Italy.

In the senior classification the award is the Foundation's annual prize, a silver plaque, for the best essay presented at the annual meeting of the organization.

All entries must be received by the Award Committee not later than September 1, 1952. Further inquiries should be addressed to The Award Committee, Jacques W. Maliniac, M.D., 11 East 68th Street, New York 21, N.Y.

* * *

The Western Association of Industrial Physicians and Surgeons will hold its eleventh annual meeting at the Biltmore Hotel in Los Angeles on Saturday, April 26, 1952, the day before the opening of the California Medical Association annual meeting. A feature of the meeting will be a panel discussion on the medical administrative problems of unemployment compensation disability insurance, which, it was pointed out, affect all practicing physicians who are called upon to fill out reports for disability insurance purposes. The panel discussion will be held in the Music Room, beginning at 2 p.m. The full program will begin at 9 o'clock and continue all day.

* * *

The annual meeting of the California Chapter of the **American College of Chest Physicians** will be held April 26 at the Beverly Wilshire Hotel, Beverly Hills. The meeting will open at 9 o'clock in the morning and continue until 4:45 p.m.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE

Cardiovascular Diseases (mornings), Electrocardiography (afternoons):

Date: April 28 through May 3 at the Medical Center.

Psychiatry and Neurology—The Langley Porter Clinic.

Date: August 25 through October 31, 1952, ten weeks, full time.

Fee: Fee for the course is $200.

The course is particularly designed to prepare psychiatrists and neurologists for taking the examinations of the American Board of Psychiatry and Neurology.

Contact: Stacy R. Mettier, M.D., Head Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Survey Course for General Practitioners—No. 852—Los Angeles County Hospital and the Children's Hospital.

Date: April 14 through 18, 1952, full time.

Fee: Fee for the course is $50; a deposit of $10 is required; this is not refundable. Mail check to University of Southern California, Medical Extension Education, Box 158, 1200 North State Street, Los Angeles 33, Calif.

Anyone not desiring the complete five-day course may register for one or more days. The fee for fewer than five days will be $10 per day.

Contact: Gordon E. Goodhart, M.D., Director, Medical Extension Education.

Guest Lecturers: Dr. Paul Starr, Professor of Medicine; Dr. Helen E. Martin, Associate Professor of Medicine; Dr. C. J. Berne, Professor of Surgery; Dr. Ray A. Carter, Professor of Radiology; Dr. Merl J. Carson, Professor of Pediatrics; Dr. Verne R. Mason, Clinical Professor of Medicine.

Recent Advances in Surgery, Obstetrics and Gynecology—No. 869—Ventura County Hospital.

Date: April 11 to June 27, 1952, part time.

Fee: Fee for the course is $50. Mail check to University of Southern California, Medical Extension Education, Box 158, 1200 North State Street, Los Angeles 33, Calif.

Contact: Gordon E. Goodhart, M.D., Director, Medical Extension Education.

INFORMATION

The New Amendment to the Food and Drugs Act

O. V. McCracken, Executive Secretary of California Pharmaceutical Association

The Durham Humphrey amendment to the Federal Food, Drug, and Cosmetic Act (Public Law 215, 82nd Congress) became fully effective April 6.

To the greatest degree this law affects manufacturers, producers and distributors of drugs in interstate commerce, and pharmacists and others who sell or dispense these drugs to the ultimate user.

The demand for a change in the law was made by pharmacists operating retail stores because of the existing confusion with respect to the labeling of drugs, the gross misuse of the prescription legend by manufacturers, and rulings of the Food and Drug Commissioner regarding refilling prescriptions.

The actual wording of the Federal law and regulations issued pursuant to it made any prescription, unless it was an original prescriptions written by the prescriber, unlawful. No phone prescription even for the simplest drug was lawful and no phone authorization was recognized either for an original order or for a refill. The Administrator subsequently modified this position by stating that confirmation in writing within 72 hours would be acceptable.

In spite of the fact that pharmacists working with physicians to give the patient a maximum service disregarded to some extent these rigid regulations, there were nevertheless numerous instances where the pharmacist got into serious trouble with the law enforcement officers because he was trying to carry out a traditional policy long established as ethical.

The climax to the utterly ridiculous position of the Administrator (at that time Dr. Paul Dunbar) came in an address delivered at the convention of the National Association of Retail Druggists at Atlantic City, in which he said that the refilling of *any* prescription was not in fact the dispensing of a prescription, but actually a sale over the counter of the drug involved. And the suggestion was made that the pharmacist could, if the drug called for was one that could be sold without a prescription, sell it to the patient by merely labeling it with its common name and any directions that might be required in conformity with food and drug law requirements.

This was the straw that really broke the camel's back, and a longsuffering and tolerant retail drug group got up on its hind legs and started to fight.

This prescription question was not the only bad feature of the law. Another just as vexing and troublesome was the question of the use of the prescription legend on drugs. Some manufacturers were using this legend on the simplest of drugs. The use of this legend on calcium carbonate was a striking example of such misuse.

The purpose of the amendment was to clarify and determine which drugs should be dispensed solely on prescription and which could be sold without prescription. The labeling was to be the criterion. The contention was that a drug safe for lay use should not bear the prescription legend, and that one unsafe for use except under professional advice should bear it.

California Pharmaceutical Association believes the physician should be the one to determine the use of all drugs bearing the prescription legend and his authority to the pharmacist should be the controlling factor of their distribution. This condition is provided for in the amended law.

And for the first time in the law an objective definition is given of the kind of drug that should bear the prescription legend. In fact, if it qualifies it *must* bear the legend. That is where the physician comes in. Since the new classification definitely determines the distribution of the drug only on prescription, the physician has a privilege and an obligation.

The privilege is one of complete control, which is given in the interest of safety and public health, and the obligation is to see that the pharmacist has the proper authority to dispense and that he is given instructions regarding refills if refills are intended. The control for use of the drug limited to prescriptions is just as effective with respect to refills as it is to the first order. Within this scope of obligation the patient deserves first consideration, for in the case of a need for continuing medication the patient should be able to obtain his prescription with the least inconvenience to himself.

For the pharmacists, the regulations on this new law make about 12 typed pages. They are not too hard to comply with because the law is fairly clear. As to the basic points of the new law of interest to physicians:

A physician may write or telephone *any* prescription (except a narcotic prescription) to the pharmacist and it is a legal order, requiring no confirmation in writing.

He may, in writing or by telephone, authorize the refilling of *any* prescription (except a narcotic prescription) and it is a legal prescription requiring no confirmation in writing. Under the Federal law, he may, either in written prescription or in oral prescription, give *any* authority he desires regarding the refilling of such prescription—*but in California barbiturates would be excepted from this provision in the Federal law; the California law requires a separate order for each dispensing of any hypnotic drug.*

A physician may give an order or prescription for drugs for a patient, without doing so personally, and the pharmacist can fill such order, if he is satisfied that the order is by "express authority" of the prescriber. Such "express authority" would come through an employee of the physician to whom such instructions were given, and not through a patient.

BOOK REVIEWS

TEXTBOOK OF BIOCHEMISTRY—Edward Staunton West, Ph.D., Professor of Biochemistry, University of Oregon Medical School; and Wilbert R. Todd, Ph.D., Associate Professor of Biochemistry, University of Oregon Medical School. The Macmillan Company, 1951. 1,345 pp. $12.00.

This book should rapidly become the most quoted American textbook of biochemistry, not only because it is the most comprehensive of the recent books in this field, but also because it is interestingly and clearly written. It is distinctly a treatise on the chemistry of biological compounds rather than on chemical physiology, although there is enough discussion of the latter to show the dynamic character of the chemistry of protoplasm. The subject matter is logically arranged, beginning with a brief introductory statement concerning the composition of protoplasm, then five chapters, totaling 150 pages, on physical chemistry as applied to biology. Then follow chapters on the pure chemistry of lipids, carbohydrates, proteins and nucleoproteins which lay the basis for the understanding of the metabolism of these substances and complexes in the body. Chapters XIII to XVIII describe the composition of the body, the digestion and absorption of food and detoxication mechanism. Chapter XIX on the Chemistry of Respiration, Acid-Base Balance, and Electrolyte and Water Balance devotes 68 pages to the correlation of these various factors in body chemistry, with detailed chemical and mathematical formulas to describe the reactions. This chapter will be difficult for the medical student to grasp in the short time permitted in the medical curriculum for the study of biochemistry, but for graduate students and for research workers and scholars, it is a very valuable portion of the book. By contrast, the succeeding Chapter XX, entitled "Energy Metabolism," devotes very little space to mathematics, but is a clear description of the factors involved.

The biological role, as well as the pure chemistry of the vitamins, is clearly described in 123 pages in Chapter XXI. Chapter XXII on Biological Oxidation and Reduction is another mathematical discussion which requires patient reading and a considerable appreciation of physical chemistry to understand. The remaining chapters on metabolism of food constituents and products of digestion are well written and include modern concepts of the chemical reactions of intermediary metabolic products, although Figure 63, which attempts to summarize the breakdown of glucose is too complex to be comprehended without long study. Chapter XXXII on Urine Formation and Composition is a fine contribution to the literature on this subject and discusses just enough of the physiology of the kidney to explain the composition of the urine.

Especially outstanding features of the book are the manner of discussion of the chemistry of lipids, carbohydrates and protein, with profuse use of structural formulas and the chemical logic to substantiate the proposed structures; many excellent tables such as those on molecular weights and isoelectric points for proteins, composition of blood and normal ranges of concentrations of a large number of blood constituents, biological values of food proteins, the integration of fat, protein and carbohydrate metabolism through the tricarboxylic acid cycle; an excellent discussion of the biochemistry of experimental and human diabetes and of the effects of insulin; the clear discussion of transamination and transmethylation; the metabolism of alcohol and mineral metabolism. The chapter on hormones, however, is far too brief, although accurate as far as it goes and the chapter on antimetabolic agents is truly disappointing, in that it includes a discussion of sulfonamides, antibiotics, insecticides and herbicides without giving much information as to the antimetabolic mechanisms, and there is no discussion at all of the anti-cancer agents such as nitrogen mustards and folic acid antagonists nor of the other anti-vitamin compounds.

Although the book is arranged logically, the reviewer would rather have found a more pedagogical arrangement; for example, Chapter XIII on the Composition of Tissues would have been better as an amplification of Chapter I and would have made more clear to the student the importance of the following chapters on physical chemistry and on the chemistry of bodily constituents. As the book now stands, there is not the motivation of an understanding correlation to make these otherwise "dry chapters" interesting.

* * *

OBSTETRICAL PRACTICE—Fifth Edition—Alfred C. Beck, M.D., Professor Emeritus of Obstetrics and Gynecology, State University of New York, College of Medicine, at New York City. The Williams and Wilkins Company, Baltimore, 1951. 1073 pages. $10.00.

This is an excellent textbook of obstetrics, simply and concisely written. In a brief preface the author outlines the revisions and additions made since the fourth edition was published in 1947. These include newer concepts of the following: Development of the ovaries, the life-cycle of the corpus luteum, the histology of the endometrium and vascular changes in relation to hormone influences, and the implantation and development of the fertilized ovum. Chapter V on the physiology of the placenta and Chapter VI on the physiology of the fetus have been rewritten. The chapter on the physiology of the maternal organism during pregnancy includes recent findings regarding the uterine musculature and fluid balance. There is an excellent summary of the hormone shifts in pregnancy. The newer tests for pregnancy, including the frog test and the rapid rat test, are outlined in Chapter VII.

The material on the management of pregnancy is notable for its specific outline of dietary needs. The actual foods and amounts necessary to meet these needs are given.

The discussion of pelvimetry is up to date and includes both the Thoms and the Caldwell Moloy techniques and nomenclature. The inadequacy of external pelvimetry is emphasized.

The two chapters on hyperemesis gravidarum and preeclampsia and eclampsia clearly and concisely outline the available knowledge regarding the etiology and treatment of these puzzling conditions. The references are comprehensive. Under the heading of medical complications is a discussion of the Rh factor, abbreviated, but adequate.

Other subjects which have been brought up to date in this textbook are the treatment of trichomonas and yeast infections in pregnancy, and the use of intravenous drip pituitary solution to stimulate uterine contractions. Mention is made of anticoagulant therapy in thromboembolism. A. B. Johnson's technique for handling inversion of the uterus by pushing the whole mass high into the abdomen and holding it there until the uterine ligaments slowly unfold is credited as being a contribution.

The two tables in the chapter on puerperal infection, giving the relation of anemia to postpartum morbidity and of various delivery manipulations and procedures to morbidity, respectively, are thought-provoking.

The book is not above criticism. The local antiseptics mentioned, iodine and chlorothymol, are rarely used and there are a wealth of new and more adequate solutions. Although the use of penicillin, streptomycin, aureomycin and sulfa is given, the later, broader spectrum antibiotics are not mentioned.

The material on repair of lacerations and episiotomies is very limited.

In the description of cesarean section there is no mention of the transperitoneal transverse opening of the uterus which has gained popularity in many sections. The use of spinal anesthesia is given very little support. No mention is made of fetal abnormalities or of circumcision techniques. Moreover, the hazard of thromboembolic accidents following myomectomy at the time of cesarean section is not mentioned, and one could wish for a more detailed discussion of anticoagulant therapy.

However, the text is well arranged and well written, and the plates and charts are clear and to the point. Especially commendable is the arrangement of the historical data, biographical notes and pictures of the great men who have contributed to our knowledge and techniques. These are placed at the beginning or end of appropriate chapters without interfering with the text.

The appendix consists of 22 excellent x-ray reproductions covering the following subjects: Pelvimetry, presentations, multiple pregnancies, fetal anomalies and urological changes.

It is a valuable book for both students and practitioners.

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BACTERIAL AND VIRUS DISEASES: Antisera, Toxoids, Vaccines and Tuberculins in Prophylaxis and Treatment — H. J. Parish, M.D., F.R.C.P.E., D.P.H., Clinical Research Director, Wellcome Foundation Ltd. Second edition. The Williams and Wilkins Company, Baltimore, 1951. 204 pages. $2.50.

This little book is intended to be a brief guide to the use of biologics for the prevention or treatment of infectious disease. Brief descriptions of the histories of the development of many of the products and of the methods of preparation are included. It reflects essentially the points of view of the Wellcome Foundation in England. An excellent index makes the useful information in the book readily accessible.

The development of antimicrobial chemotherapy has superseded most of the antibacterial sera in therapy and this fact is recognized in the brief space devoted to them. The chapter might well be omitted.

Many of the other substances described for treatment and for the production of active immunity are of no or questionable value. Critiques permitting the inexperienced physician to choose between valuable or essential procedures and those without merit are not supplied. It would be necessary for him to consult other texts for this information. Most of these would contain descriptions of the techniques for the use of the effective biological materials. This book will be of little value to the practicing physician and is not sufficiently detailed and critical to find a place in the library of medical student or investigator.

* * *

A MANUAL OF ORTHOPTICS—Julia E. Lancaster, M.A., San Francisco Ophthalmic Laboratory, San Francisco. Charles C. Thomas, Publisher, Springfield, Illinois. 1951. 199 pages. $5.50.

This book has 191 pages of subject matter and is quite unique in that as a treatise on orthoptics it is a pioneer.

The book is divided into 18 chapters beginning with the functional development of visual skills in the child. The last chapter deals with orthoptics in the adult.

Between these two chapters the teaching of visual skills is very well handled, especially since this is a pioneer effort. In a later edition, some of the redundant material can be eliminated.

This book gives a practical approach to the evaluating and the development of visual skills both with and without the aid of surgery and of refraction. Since the work is largely with children, the proper handling and evaluating of a child is carefully and ably discussed. The varied forms of treatment are clearly given and could be followed with reasonable ease.

The discussions of anomalous correspondence, physiologic and non-physiologic diplopia, and suppression should be read by all ophthalmologists. The discussions are lucid and in the reviewer's opinion would be extremely valuable to the surgeon in his diagnosis, his evaluation of treatment, and his prognosis in each tropia case.

The chapters on treatment are easily comprehended and should be read by ophthalmologists as well as orthoptic technicians in order to better coordinate their treatment of their mutual cases.

The reviewer may be over-enthusiastic about this book, but he feels that it fills a much neglected area of understanding in the field of ophthalmology.

* * *

THE CHANGING YEARS — Madeline Gray. Doubleday & Company, Inc., 1951. 224 pages. $2.75.

The expressed purpose behind the production of this volume is certainly an admirable one. Every physician is recurrently appalled at the ignorance shown by women regarding their menstrual function, and in no facet is this more pronounced than in that part of the menstrual function which occurs at the time of the menopause. Undoubtedly this ignorance is the product of the taboos with which mankind, civilized and uncivilized, has been accustomed to surround sexual matters in general, especially those involving the female. Thus a simple explanation of the body physiology as it relates to menstruation, and in particular as it changes at the time of the menopause, is of great value.

It appears, from the long list of physicians and publications which the author has consulted and which is included in a separate section at the back of the book, that considerable time and effort have been expended in the preparation of "The Changing Years," and it is unfortunate that a better understanding of some of the matters which were heard and read was not gained before they were set down in black and white. A number of gross anatomicophysiological errors are evident, and some concepts which are presented as fact are in reality still the subject of considerable discussion and controversy. To the physician these defects are distracting, and detract from the value of the book as a whole. In the lay mind the menopause is already surrounded by so much superstition and fancy that one hesitates to recommend any statement which might tend to increase the confusion in the mind of an uncritical reader.

However, it would appear that by and large the great majority of women might well derive considerable degrees of comfort from the presentation of the subject as a whole. Great benefit should accrue from the attitude that the menopause is not a "change of life" in the sense that such an expression implies a total change of direction, but that it is simply one more of the progressive steps through which one inevitably passes during the course of life. The specific reassurances that the menopause does not necessarily mean cancer, or loss of sexual power and drive, or the approach to insanity, or any one of a host of other unpleasantnesses should bring readers a sense of relaxation which will tend to help them weather whatever difficulties their individual menopauses may produce.

PROGRESS IN NEUROLOGY AND PSYCHIATRY—An Annual Review—Volume VI. Edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Grune and Stratton, New York, 1951. 562 pages. $10.00.

This review of the year's literature in neurology and psychiatry has become so well established as to be a fixture. The quality of the various chapters varies as it must inevitably in such a compilation, but generally it is very good. The book should be in the hands of all specialists in the field, and selected portions of it make very profitable reading for the general practitioner as well. As in all such reviews the approach of the authors must be a compromise, with the result that all too frequently the treatment is too specialized and detailed for the reader seeking a broad knowledge of the field and yet does not embrace sufficient specific information for the reader interested in the restricted aspect of the subject under consideration.

Of the 562 pages, 175 are devoted to psychiatry. When one considers that the greatest number of readers will be in this specialty this may seem too little, yet an evaluation of the material presented lead this reviewer to the opposite conclusion. Several of the chapters are of unusual excellence, among which might be mentioned that on Peripheral Nerve Surgery by Woodhall and on Clinical Psychiatry by Simon and Bowman. The latter sound a word of caution regarding the present tendency of their colleagues to bring forth cures for the social ills of the world.

* * *

DYNAMIC PSYCHIATRY — Basic Principles — Volume One—Louis S. London, M.D. Corinthian Publications, Inc., New York 16. 98 pages. $2.00.

Presumably this is volume one of a series on so-called dynamic psychiatry. It is a curious mixture of the history of psychiatric thought and a discussion of the concept of the libido from a psychoanalytic point of view. Although the first chapter is entitled "The Evaluation of Psychotherapeutics from Antiquity to the Time of Freud," it ends with a single statement about the "reform of the insane asylums" by Tuke and Pinel in 1792, and disposes of the last 150 years of psychiatry with the following remark: "The further history of psychiatry is the story of the development of Freudianism, psychoanalysis and of the various schools of thought from which evolve the psychotherapeutic methods of today."! If anyone is interested in the origin and development of present day psychiatric concepts, he will not find them here.

The latter half of this little book is devoted to an explanation of the psychology of the libido as developed by Freud, Jung, Abraham and others; the style is lacking in clarity, and controversial questions are dogmatically presented with little or no elaboration. For example, "When women marry late in life due to repressed libido, they are more susceptible to trauma. This is due to the gelatinization or congealing of the libido and acts like the hardening of the skin causing perineal tears." The author's apparently hostile attitude to his patients is exemplified by his statement, "Those of us who have worked in state hospitals know how cowardly the insane are, and neurotics are likewise cowards." One will search in vain to find here any clear concept of dynamic psychiatry or principles of psychotherapy.

* * *

AMPUTATION PROSTHETIC SERVICE — Earle H. Daniel, Director of Prosthetic Service, Institute of Physical Medicine and Rehabilitation, New York University. The Williams and Wilkins Company, Baltimore, 1950. $7.00.

The author has presented a good comprehensive review of the general problem of amputation as it pertains to both the lower and upper extremities. The surgical aspects and indications are not discussed. He has, however, discussed and presented reasons for choosing certain sites of amputation in both upper and lower extremities. These various sites are discussed from their functional standpoints as applied to the prosthesis which the patient will wear.

The care and preparation of a stump for the fitting of a prosthesis as well as presenting a program of exercises for the purpose of obtaining better control and strength of a stump are outlined. Psychological treatment of the amputee is most important and is well presented with suggestions for overcoming the rather common condition which he speaks of as "amputee's disease." There is also included a good discussion as to the selection of an artificial limb and its construction from the various types of material currently in use. The benefits and indications of the suction socket prosthesis for the above-knee amputation are shown. He also reviews the problems and types of prosthesis for upper extremity amputations including the satisfactory but not common cineplastic type of amputation and the prosthesis used for it. Certain problems are also present in the fitting of artificial limbs for children and changing conditions due to growth must be recognized.

It is a well illustrated book and with the general good discussion, should serve well as a reference book for amputees, limb fitters and surgeons. Surgeons who are not too well acquainted with the general problem of prosthetic devices and their application to amputation stumps could obtain pertinent information from it. It should be a valuable addition to medical libraries.

* * *

BONE AND JOINT DISEASES—Pathology Correlated with Roentgenological and Clinical Features — J. Vernon Luck, M.S. (Ortho.), M.D., F.A.C.S., F.I.C.S., Assistant Clinical Professor of Orthopedic Surgery, University of Southern California. Charles C. Thomas, Publisher, Springfield, 1950. $16.50.

The reviewer decided after first inspecting this volume that it warranted more than hasty scanning. The text has been used as a reference book, and it has not been found wanting. General practitioners and members of various specialties will find the work helpful, because in the past it has been necessary for the physician to look up many references and to consult many textbooks to obtain a well rounded concept of any one of the diseases affecting bones and joints. This volume correlates the known pathology with roentgenological and clinical features.

To be more specific, the author includes recent concepts of certain pathologic entities not included in older textbooks. For instance, he reviews the modern ideas about osteoid osteomas and fibrous dysplasia of bone. Again, the general practitioner or specialist may want and find here concise information about coccidioides, yaws, echinococcosis, brucellosis, actinomycosis, blastomycosis, leprosy, etc., to enable him to make a diagnosis and institute proper treatment for patients under his care.

The text is illustrated by many excellent reproductions of gross as well as of microscopic sections portraying many phases of bone and joint pathology. A considerable number of these are in color. It is evident that the author had available many excellent roentgenograms, and very little detail has been lost in the reproductions.

The orthopedic specialist will likely be reminded that he had recognized the need of such a volume but had never put forth the effort needed to get the material together. He will also agree that as Dr. Luck has contributed such a helpful work, Dr. Luck is also duty-bound to continue to collect material and to revise his text as more information becomes available for subsequent volumes.

A TEXTBOOK OF CLINICAL NEUROLOGY with an Introduction to the History of Neurology, Seventh Edition—Israel S. Wechsler, M.D., Clinical Professor of Neurology, Columbia University, New York. W. B. Saunders Company, Philadelphia, 1952. $9.50.

It is now 25 years since this textbook of clinical neurology first appeared; through seven editions the author has kept the book thoroughly abreast of the times. In the present edition obsolete matter has been eliminated and new material presented where indicated with little regard for the effort involved, effecting a definite improvement in what has always been a very good text.

The initial hundred pages devoted to neurological examination are very worth while. Thereafter, there is a division into three main sections, devoted to the spinal cord, the peripheral nerves, and the brain. Although this topographical separation makes for a certain amount of duplication, it is a particularly satisfactory one for the student. The final short chapter on the neuroses brings up the question as to whether such material should be included in a neurological text. Certainly it is never adequate from the standpoint of the psychiatrist, and in general seems inappropriate in a volume devoted otherwise exclusively to organic disease.

This is a book which can be recommended both to the student of medicine and to the practitioner as an adequate source of instruction and reference.

* * *

THE HEALTH OF THE MIND—J. R. Rees, M.D., Director, World Federation for Mental Health. W. W. Norton & Company, Inc., New York, 1951. $2.75.

This little volume is obviously directed to the ordinary layman with the avowed purpose of giving him some general ideas about mental hygiene. After a brief introduction about the historical development of psychiatry, simple definitions of psychoses, psychoneuroses, and character disorders are presented along with brief descriptions of Freudian, Adlerian and Jungian psychology. A short outline of "body mechanisms" with particular emphasis on the role of the central nervous system and of the glands of internal secretion is designed to give the reader some slight knowledge of the individual's "physical machine." The role of emotions, instincts, and "sentiments" in this total functioning of the personality is correlated with structure in such a manner that the general concept of the close interaction of mind and body is made quite clear without the use of highly technical language.

Psychological mechanisms, such as projection, transference, identification, compensation, repression and conversion are illustrated by examples of behavior and attitude in everyday life with minimal emphasis on the pathological, and in this way the author avoids arousing an excess of anxiety in his readers. The chapter on the causes and cure of mental breakdown is also presented in a simple, straightforward manner. Various methods of therapy, both somatic and psychological, are mentioned with no pretense that there is any panacea for the difficulties arising from emotional conflicts. Problems that may arise during early life, childhood, adolescence, maturity and old age are all discussed in a sensitive fashion, and nowhere, not even in the chapter on sex education, is there a tendency to lapse into technical polysyllabic psychiatric jargon. The author states, "There can be nothing in our mental life that we should fear to look at. To ignore those things which need alteration or revaluation is a foolish and short-sighted method. Self-knowledge is essential if we would have progress for ourselves and for society."

This book may be enthusiastically recommended by the physician to his patients, especially to those who ask for some simple exposition of psychological problems and mental hygiene.

SURGERY OF PERIPHERAL NERVES—Emil Seletz, M.D., F.A.C.S., F.I.C.S., Assistant Clinical Professor of Neurological Surgery, University of Southern California School of Medicine; Art Editor, Tom Jones, Professor of Medical and Dental Illustrations and Head of Department, University of Illinois. Charles C. Thomas, Publisher, Springfield, Ill., 1951. 185 pages. $10.75.

Dr. Seletz' book represents the result of his broad and detailed experience with 2,037 peripheral nerve injuries at the Wakeman Hospital Center during World War II. The book is divided into 19 chapters, the first of which is devoted to the principles and technique of nerve surgery. This subject is developed briefly; the chapter is in no sense a comprehensive treatise and its brevity implies familiarity with peripheral nerve surgery on the part of the reader. The succeeding chapters, 18 in all, consider the anatomy, clinical diagnosis of lesions and surgical treatment thereof for each major peripheral nerve. The text includes a clear, elementary discussion of the surgical anatomy and clinical picture of paralysis of each nerve. Numerous large photographs of the paralyzed limbs of patients illustrating the results of nerve injuries are included, and the anatomy of each nerve is depicted in generous sized and beautiful drawings which will be found helpful in planning the surgical approach to a given nerve. The techniques of nerve repair which are presented are the result of the author's personal experience. Emphasis is placed upon nerve exposure through fascial planes and procuring added length for neurorrhaphy with special reference to the median nerve.

Dr. Seletz' discussion and illustrations of his favorite surgical incisions will be welcome. Such descriptions of techniques successful in his large series, together with the numerous and clear pictures, constitute this book's greatest contribution to the field of nerve surgery.

This book concerns itself exclusively with nerve injuries. No consideration of other nerve lesions is included. Problems encountered in civilian life such as delayed nerve palsies are not discussed. The management of partial nerve lesions, the rate of recovery of injured nerves, the prognostic signs in following return of nerve function, the problem of reoperations and the optimum time therefor, are subjects which are omitted. Likewise omitted is a consideration of the role of neurolysis in the treatment of nerve injuries. The very brief discussion of the treatment of causalgia does not permit more than a statement of the technique which has been successful in the author's hands.

The book does not pretend to be a text, for indeed references are few and no bibliography is included.

It is beautifully produced on high-grade paper, it is readable, the illustrations are conveniently labeled, and the charts of nerve function will act as a ready review. The book deserves scrutiny by all who plan definitive surgical treatment of nerve injuries and the principles will frequently apply to the treatment of non-traumatic lesions.

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PENICILLIN DECADE, 1941-1951—Sensitizations and Toxicities—Lawrence Weld Smith, M.D., Medical Director, Commercial Solvents Corporation; and Ann Dolan Walker, R.N., former Editor, "Trained Nurse and Hospital Review." Arundel Press, Inc., Washington, D. C., 1951. 122 pages. $2.50.

Between the covers of this little book with the intriguing title of "Penicillin Decade," one finds a catalogue of all the untoward effects of this antibiotic reported in the past ten years. There are references to no less than 342 titles. Such a collection seems to present an alarming picture; one must remember that most of these penicillin reactions are not common. Aside from being a valuable work of reference, however, this compendium may remind the doctor that after all it is better to have a clear indication for the use of antibiotics than to use them indiscriminately.

ANTIBIOTIC THERAPY—Henry Welch, Ph.D., Director, Division of Antibiotics, Food and Drug Administration, Federal Security Agency of the United States Government; and Charles N. Lewis, M.D., Medical Officer, Division of Antibiotics, Food and Drug Administration, Federal Security Agency of the United States Government. The Arundel Press, Inc., Washington, D. C. $10.00.

This book of 560 pages, heavily documented, is more a work of reference than a treatise to be read through from cover to cover. The first chapters deal with the individual antibiotics in order of discovery, taking up systematically their preparation, composition, pharmacology, and antibiotic qualities. Then come sections on infections with particular bacteria or special diseases such as syphilis. Treatment is discussed in rather diagramatic and at times almost dogmatic fashion, nor do the brief definitions of disease seem to serve much purpose. It is hardly necessary to tell the medical reader that syphilis is caused by Treponema pallidum, etc., etc., or that brucellosis is caused by various forms of Brucella. Indeed one gets the impression that the writers, who are members of the Food and Drug Administration of the Federal Security Agency, are writing a treatise for general information and not entirely a manual for practicing doctors, although any practitioner will find the book invaluable. More could be said about the recent work on antibiotic synergism and antagonism.

* * *

DIABETES CONTROL—Edward L. Bortz, M.D., Chief of Medical Service B, The Lankenau Hospital, Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1951. 264 pages. $3.50.

This book is a generally sound, up-to-date manual written for the intelligent diabetic patient in such language that he can understand it and from such a viewpoint that he can be optimistic about his condition. The physician caring for diabetes may well recommend it to his patients.

Along with these remarks of overall commendation the reviewer must note certain criticisms: There is a tendency to glibness without foundation in such comments as the one on the amount of rest one needs (page 193): "It was Henry Fielding who said that an hour of sleep before midnight was worth two afterwards and Heiser says this is still true." ...Food exchanges are first mentioned on page 62 but the system is not explained until page 109. ...The tables of weight for men and women list average rather than ideal or optimum weights as "normal" and tend to detract from an otherwise excellent chapter on weight control. . . . Although the appendix on the composition of alcoholic beverages notes that "the bold face numerals indicate the number of grams ...in an average portion," the bold face type has been unaccountably omitted (despite its presence in the text from which the table is taken).

The author is urged to remedy these defects in a later edition.

* * *

FROM DUGOUT TO HILLTOP—Margaret R. Stewart, M.D. Murray & Gee, Inc., Culver City, 1951. 233 pages. $3.75.

Dr. Stewart's account of her life story from the pioneer home to the practice of medicine is indeed a fascinating tale. It not only is her personal story but it gives an excellent account of the United States and its rapid expansion and development in the century of any one life span. The book itself is indeed readable, it is full of humor, it has many gay spots but also it tells of tragedy and danger. It is a worthwhile book both for its human qualities and its historical account.

THE GENETICS OF MICRO-ORGANISMS—D. G. Catcheside, Reader in Plant Cytogenetics, University of Cambridge, Fellow of Trinity College, Cambridge. Pitman Publishing Corporation, 2 West 45th Street, New York 19, 1951. 223 pages. $4.50.

The field of microbial genetics has expanded dramatically during the past decade. In spite of the theoretical and practical importance it has assumed, no book dealing exclusively with inheritance and variation in micro-organisms has previously appeared. Professor Catcheside has now provided a most useful introduction to the subject, based on lectures originally prepared for biochemists specializing in microbiology.

Problems, methods, and outstanding results are outlined for representative organisms in which genetic problems have been studied intensively. Chapters devoted to genetic analysis in fungi, to gene action ("biochemical genetics") and to mutation and adaptation, are appropriately centered around the fungus Neurospora. The comparative biology of sexual reproduction is discussed with reference to a wide variety of forms, chiefly fungi, and following chapters are devoted to yeast genetics (including discussions of the adaptive enzymes and cytoplasmic inheritance) and to the genetics of protozoa (dealing chiefly with the intricate but beautiful findings on relations between nucleus, cytoplasm, and environment in Paramecium). A chapter on bacterial genetics contains an account of recombination studies and genetic mapping in *E. coli*, a thorough discussion of mutation-rate measurements, and a critique of the problem of distinguishing mutation and selection from induced adaptive change in bacterial populations. Finally, studies on mutation and recombination of bacterial viruses, and on the genetics of resistance and infectivity of the bacterium-bacteriophage system, are described. (Perusal of the highly selected bibliography of 200-odd publications reveals that an impressive number of papers have originated from universities in California.)

While certain topics (e.g. gene-controlled biosyntheses, host-parasite relations, drug resistance) bear an obvious relationship to medical problems, the author has not attempted to emphasize practical aspects, and the book will disappoint any who expect applications to be stressed. But those who desire a critical summary of numerous exciting developments in microbiology will find the book rewarding.

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A TEXTBOOK OF CLINICAL NEUROLOGY — Third Edition—J. M. Nielsen, B.S., M.D., F.A.C.P., Clinical Professor of Neurology and Psychiatry, University of Southern California. 212 illustrations. Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, N.Y., 1951. 709 pages, $10.00.

Each succeeding edition of this textbook of Neurology has shown distinct improvement, until now it must be acknowledged to be one of the most adequate texts available. Since no neurologist can be equally adept at all branches of the specialty, so one must have his preference for different textbooks for different aspects of the subject. Nielsen's work, however, shows remarkably good balance, and can be recommended to student and practitioner alike.

As is inevitable in a book of this scope, certain minor errors have crept in, particularly in fields with which the author was not too familiar from personal experience. Thus, the statement is made that the threshold of denervated muscle to galvanic stimulation is raised, while quite the contrary is the fact. Again, he speaks of muscle action potentials with "a millivoltage of 10 to 1200" where the proper word is microvoltage. Such minor slips of the pen will undoubtedly disappear from subsequent printings, and do not materially detract from the value of this really first-rate textbook.

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Medicine on the March

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IT HAS BEEN a great honor to serve as President of the California Medical Association. I wish to express my heartfelt gratitude for the privilege accorded me. To me, the past year will always be the high point of my medical career.

Because they affect the present and will affect the future, I am going to discuss some of the changes that have taken place in medical science and practice during my generation. According to Webster, a generation is 33 years. So I have been able to personally observe these changes as an active practitioner of internal medicine. In that time there have been great advances in scientific knowledge and in technical skills. There have been great changes in the socio-economic picture, brought on by accelerated evolution.

A generation ago the art of medicine was almost uppermost in medical healing. There were very few specific remedies. Important discoveries had taken place in pathology, bacteriology, biochemistry and radiology, but the almost miraculous advances had not yet begun. The family doctor, frequently bearded or Vandyked, and carrying his little black satchel, was held in high esteem and was close to the hearts of his patients. Specialization was just beginning. Roads were poor and transportation was slow. The shifting of the people to the cities had not really started.

The relationship between patient and doctor was much closer and more intimate. The physician was not only a doctor, he was a wise and trusted counselor—a respected friend. He was a leader among men in his community. He thought of man as a whole, of both his mind and his body, not just as a disease entity.

A large part of medical practice took place in the home, where the doctor closely observed the good or bad circumstances under which people lived. He realized how much poor social conditions, poverty, undernutrition, bad housing, poor sanitation and unemployment contributed to the causation of ill health and disease. Man was looked upon in his entirety, and his reactions to health, disease and environment were closely heeded.

The specific prophylaxis and treatment of infections had just started. People could be actively immunized against smallpox, diphtheria and typhoid fever, but these diseases were very prevalent during the usual seasons. The mortality rate was high. Immune sera against diphtheria, tetanus and meningococcal infections were available and if used early were most helpful and effective. Syphilis, with its devastating tertiary lesions, aortitis, aneurism, paresis and tabes dorsalis, was commonplace. Salvarsan had just been introduced. Tuberculosis, with its many manifestations of advanced pulmonary cavitation, adenitis, osteomyelitis and miliary infection, was just beginning to come under control. Mastoid operations were common, and lobar pneumonia was largely treated by inhalations, mustard plasters, turpentine stupes, good nursing care, hope and prayer. Streptococcal and other types of sepsis were frequent and most often fatal.

Then came the sweeping advance of science along all lines. Nutritionists, medical research workers, chemists, physicists, engineers, industrialists, and clinicians all combined their resources to produce the astounding scientific discoveries of the present age. Science rushed ahead, leaving humanism in its wake.

Scientists have taken man apart and minutely examined his organs, tissues, cells and secretions. To a scientist only exact measurable knowledge is satisfactory. Humanism cannot be measured.

Functional conceptions of disease have gradually replaced the structural. Tests of function for nearly all organs of the body have been devised.

Address of the President: Presented before First General Meeting at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

To the old routine of blood count, urinalysis and Wassermann test were added hundreds of diagnostic laboratory tests. Radiology, with its variety of contrast media, outlines organs, body cavities and vessels, with remarkable diagnostic accuracy. Radioactive isotopes solve many of our fundamental problems in medical science. Electrical instruments have increased our knowledge of the heart and brain and hardly a body cavity or aperture is beyond the prying eye of the inquisitive diagnostician. Even miniature candid cameras film the human interior in enchanting and glamorous color.

In the 1920s came insulin. At that time the average diabetic child lived only a few years. Now he may live an active life to middle age or past, and the adult diabetic may continue his useful, enjoyable existence to almost the same age as others.

Pernicious anemia, with its crippling cord lesions, is now readily controlled with liver or Vitamin B_{12}, and is no longer a sure killer of man.

Active immunization, public health and preventive medicine have proceeded so rapidly that diphtheria, smallpox and typhoid fever are relatively rare. Along with tetanus, these diseases could be quickly eliminated if all people would accept active immunization. Not long ago, in consultation, I diagnosed a case of typhoid fever. The young doctor thanked me for showing him the first case of typhoid fever he had ever seen.

With the advent of the sulfonamides in the 1930s the chemical attack on bacteria in man really began. Then came penicillin and other antibiotics, and most bacterial infections fell before the barrage of the magic bullets. And surely there will be many more of them. There is hope that even tuberculosis may soon fall before the wonders and miracles of modern medical science.

Studies in nutrition and metabolism have produced the many vitamins—somewhat overused, it is true—with prevention and cure of deficiency diseases. Hormones have been synthesized and used to produce remarkable effects. The discovery of ACTH and cortisone opens up an entirely new field of investigation, which may prove to be as important to medicine as the discovery of bacteria causing infections and disease.

The triumphs of modern surgery have quickly followed improved anesthesia, new technical skills and instruments, antibiotics and anticoagulants, improved knowledge of electrolyte and water balance and the increased use of oxygen, blood and fluids in the preoperative and postoperative treatment of dehydration, shock and hemorrhage. Operations upon the heart, blood vessels and lungs are now safely and successfully carried out.

With all these great advances of scientific medicine, we still have not solved the problem of neoplastic diseases and leukemia, influenza, the common cold, peptic ulcer, functional disease, poliomyelitis and virus infections, hypertension and the ever-increasing degenerative diseases.

The pronounced lowering of maternal and infant mortality has given the young an opportunity to live into adulthood—and has created new problems. Life expectancy is now 68 or 69 years, an increase of 18 years in the past generation. There are now upward of 11,500,000 Americans past 65 years, and in the next generation the number will likely be doubled. This creates the need for more intensive study of the problems of old age, both medical and socio-economic.

The prevention and treatment of degenerative diseases in middle and old age is still far from satisfactory. Further research in these diseases is more necessary than ever. Once again, we must fall back on our priceless heritage of a close doctor-patient relationship.

What with all our increased scientific knowledge, technical skills, and laboratory tests, we are in danger of becoming diagnostic and therapeutic mechanics. This must never happen. The assembly line can be used for many things, but not for medical care. Neither the patient nor the doctor is a robot. Only man can understand and treat a man because only man has a thinking human mind.

THE HUMAN RELATIONS OF PHYSICIAN AND PATIENT

In these days of scientific invention, of jet transportation, of threat of destruction by atomic bombs, of growing inflation, of rising taxes, of propagandists and caterwauling commentators, patients feel the need of the art of medicine and of a closer doctor relationship more than ever.

Recognizing such a need, the Council of the California Medical Association, through its Committee on Medical Economics, conducted a study of the individual doctor-patient relationship. As a rule of good medical practice, doctors do not treat themselves. There is an old medical saying that "a doctor who treats himself has a fool for a doctor and a fool for a patient." With this in mind, Ernest Dichter, Ph.D., New York psychological consultant, who has done research for some of the nation's leading businesses and industries, was engaged. Using Alameda County as a field laboratory, Dr. Dichter studied, by the depth interview method, the reactions of doctors and patients to each other, bringing out many fundamental psychological factors in human relations which may make the doctor-patient relationship good or bad.

This report, "A Psychological Study of the Doctor-Patient Relationship," has been printed. It is a most interesting and enlightening document. It reports facts as seen through the eyes of a practical business psychological consultant. Using the facts, suggestions are given on how to improve the relations between doctor and patient—both very similar human beings in their emotional reactions. The report, which is available at the offices of the CMA, is necessary basic reading for all interested in improving doctor-patient relations.

A projection of the report, "Doctor and Patient," summarizing the Dichter study and its practical public relations application, has been prepared by Rollen Waterson, Executive Secretary of

the Alameda-Contra Costa Medical Association. William Tobitt, formerly Executive Secretary of the Orange County Medical Association, assisted in its organization and writing. It has been mailed to all members of the California Medical Association. It should be read by every member. There has been a great demand for these two publications, from all parts of the country. As part of its public relations program the California Medical Association has met this demand. It has mailed out thousands of copies.

It is not my purpose to go into detail concerning these basic psychological and practical studies. I would like to make only a few remarks on the doctor-patient relationship, based on findings in the Dichter report and on personal observations.

Patients desire and need, more than ever, a doctor who will not only work modern scientific miracles but be an adviser, a listener and a friend. They still look upon him as part minister or priest, and have difficulty in reconciling this with what they at times believe are very high fees. With the rapid increase in specialism, they are somewhat confused as to where to go, and to whom to turn. They would like to have someone with the skill of the specialist and the warm friendly wisdom of the old family doctor. Unfortunately, with the rapid advances of medical science, no one doctor can be all-sufficient. What people really are asking for today are doctors interested in the whole man. There are many of these available today as skilled general practitioners, internists, pediatricians, or any doctor who will take the time and interest to study and examine a person *in toto,* to sum up his problems and tell him what he needs to do. This man is the personal physician and everybody needs one.

It has been estimated that 85 per cent of man's ills and problems can be taken care of by his personal physician. When specialist care is necessary, the personal physician is a medical manager, who guides the patient to the proper specialist. He contacts and makes appointments with the specialist and consults with him, giving invaluable information along socio-economic, marital and medical lines. He follows the progress of the patient, along with the specialist, whenever necessary; and what is especially important, he remains the patient's personal physician when specialist care is ended. This promotes a continuing doctor-patient relationship and also improves doctor-doctor relations.

This may look like too big a job for just one doctor—and it is. In order to give personal service, it is necessary for doctors to have some system of handling calls 24 hours of the day. This may be done by their own personal arrangements, or telephone answering service, or through the 24-hour emergency medical service established by many county medical societies, which should be advertised in the newspapers and in the yellow section of the telephone directory. Patients in dire need of a doctor must be able to get medical care. The California Medical Association, through its well organized public relations department, stands ready to aid and assist financially with development of around-the-clock service wherever it may be called on to help.

PATIENTS WANT TO KNOW ABOUT THEMSELVES

Today's patient is more adult and mature than ever before. Through newspapers, magazines, lectures, radio and television, he is getting a great deal of scientific and medical information. He wants to know and understand his medical problems. He is not content to take in its entirety the doctor's authority. He is well informed and he would like to have explanations that are up to the level of his intelligence. In fact, the patient wants to be a participant in his medical care. When he is sick he wants the doctor to use authority, almost paternalistic authority, but when he is getting better he would like to feel that he had something to do with his recovery. He wants sympathy, guidance and help when in need but wants to handle his problems of life when he is again on his own. The wise physician encourages this attitude.

During my medical career it has been my privilege to care for a goodly number of doctors. I would say that doctors as patients are in the same need of the art of medicine as are other patients; they want the same kindly, friendly interest and sympathetic understanding of their problems; and they demand to know all about what is going on all the time; but they don't yield to their doctor's authority with quite the same grace as most patients. Being a doctor and having been a patient, this is to me quite understandable.

One of the most important factors in good doctor-patient relationship is the supplying of first class medical care at a price within the ability of the patient to pay. Within the last 15 years there has been a tremendous growth of voluntary medical care cost insurance, so that now more than one-half of the population is insured against the economic shock of illness by some type of prepayment insurance. It is true that voluntary health insurance is not yet doing the full job needing to be done, but given time and the cooperation of all concerned, plans will be developed which will cover the major cost of serious and prolonged illness in the present framework. This amazing upswing in voluntary health insurance has been developed entirely by private voluntary means, without even governmental encouragement.

It should be understood that voluntary health insurance cannot and should not seek to protect everyone against the full costs of every illness. The aim of voluntary health insurance is and should be to prevent the cost of ill health from causing financial hardship to individuals and families who might otherwise suffer such hardship. Indeed, an important and desirable feature of voluntary health insurance is its selectivity, its ability to furnish a suitable amount of protection for those needing protection, without forcing unnecessary or unwanted protection upon anyone. Doctors of medicine have always given their services to those unable to pay for medical care, and always will.

In spite of greatly increased medical care costs due to scientific advances, increased usage of medical service, and inflation, these costs have not mounted quite as fast as the cost of living. In fact, doctors' fees today are well behind the rise of living costs. Patients get well faster, live longer, and are returned to work sooner, with a great reduction in the loss of income due to lost working hours.

Each physician should set a reasonable value on his services. Here again, as in giving a clear explanation to a patient about his medical problems, the doctor should initiate and invite a frank discussion regarding his services and fees—before, not after, the service has been rendered. This will effect the best medical service based on an open and friendly understanding between doctor and patient.

Many physicians now have their own standard fee schedule, revised downward for patients of lower incomes and raised for those who demand and believe they must have a more luxurious, but actually no better, medical service. This would seem to be a sound business-like approach, provided fair and not exorbitant fees are charged.

An active mediation committee or public service committee, composed of strong, fairminded men, should be part of each county medical society. This committee, open to physicians, patients and insurance companies alike, should settle misunderstandings and differences. It is a rare problem that cannot be satisfactorily settled. Vigorous, positive action should be taken against physicians who do not carry on an honest and fair practice. There is no room in medicine for the greedy, the unethical, or the unscrupulous.

American medical schools are training the finest of scientific doctors. As has been pointed out, good doctor-patient relationship depends not only on science but on the art of medicine and good business practice. During the past few years much has been done in developing a more scientific approach to psychosomatic medicine. This is a great advance. Should not the same scientific approach be used in teaching the basic psychological factors needed in the art of the practice of medicine? It would seem most important that this be done, and by those qualified by knowledge and experience in medical practice.

Most physicians choose their profession for idealistic reasons. While the expectation of making a good living enters into the picture, the idea of devoting oneself to helping others is a very strong incentive. This is as it should be.

It must be recognized that there is a business side to medicine. Here again, instruction by qualified experts on the business of the practice of medicine would seem of vital importance. I am sure that doctor-patient relationships in general would be the better for it. The study of social economics and the doctor-patient relation should continue throughout a doctor's working years.

A year ago the Council of the California Medical Association made funds available to a committee studying industrial fees for the purpose of employing business research analysts to look into basic costs of medical services in industrial medicine.

There have been great socio-economic changes with the redistribution of wealth. The spectacular growth of health insurance and union welfare plans has emphasized the many difficulties and problems of medical fee schedules. Physicians take care of more patients than they once did. Higher taxes and inflation have further reduced buying power. It would seem wise that the California Medical Association continue and extend the study by business research analysts into all factors which enter into the costs of medical service. Such a study would be of great benefit to physicians in helping set a reasonable value on their services and of even greater assistance to frustrated committees struggling desperately to develop an acceptable fee schedule.

Every good doctor is entitled to a good income. The effort he puts forth is no ordinary effort. In America anyone who puts in the extra time and effort to obtain extraordinary knowledge and skill is deservedly rewarded.

If humanism has lagged behind science, it is only because we are living in a time which has been dominated by unbelievable scientific progress. It is characteristic of progress that it proceeds in zig-zag course. Today science is at the peak. Tomorrow humanism will rise. Looking into the past one finds humanism in medicine centuries older than in the other sciences. Looking into the future, it is not hard to visualize doctors, in their traditional style, advancing with new scientific miracles and an improved doctor-patient relationship, to a better practice of medicine filled with the greatest medicine in life—man's friendship for man.

230 Grand Avenue.

Antibiotic Therapy of Abscess of the Lung and Bronchiectasis

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SUMMARY

Since the fusospirochetal group of bacteria are the commonest etiologic agents in abscess of the lung, aqueous crystalline penicillin is the agent of first choice in the majority of cases. Streptomycin is indicated for a small group of cases in which Klebsiella is the etiologic agent. Aureomycin, chloramphenicol or terramycin may produce an excellent therapeutic response either initially or after therapeutic failure with penicillin.

Administration of antibiotics by inhalation should be carried out in conjunction with systemic forms of treatment.

In the treatment of bronchiectasis, the antibiotics are most useful in the control of acute exacerbations of pulmonary infection which punctuate the course of this disease.

THE advent of antibiotic agents has altered completely the management of acute and chronic bronchopulmonary suppuration. The bacteriostatic and bactericidal specificity of these agents has made clear the necessity for more, rather than less, specific bacteriologic diagnosis if proper treatment is to be applied. Alteration of bacterial interrelationships by eradication of sensitive bacteria permitting preponderance of resistant organisms and adaptation of bacteria followed by resistance to antibacterial agents are important phenomena in the practical management of patients. Dosage must be adequate and duration of treatment sufficient to bring infection well under control rather than merely to confuse the clinical picture and make future therapy and prognosis difficult. The purpose of this paper is to discuss the features related to antibiotic agents in the treatment of lung abscess and bronchiectasis.

Bacteriologic Diagnosis

A necessary preliminary to proper antibiotic therapy of pulmonary suppuration is an attempt to identify the causative organism. Identification is not always possible, but often failure results from reliance upon routine aerobic cultures of the sputum, whereas bacteriologic studies in such cases should include: (1) Repeated direct examination of concentrated sputum specimens for the purpose of determining whether or not the tubercle bacillus is an etiologic agent; (2) culture of the sputum upon Sabouraud's medium for detection of yeast and fungi and direct examination of the sputum for the sulfur granules of actinomycosis and mycelia of other fungi; (3) direct sputum smears stained with gentian violet for detection of fusiform bacilli and spirochetes; (4) aerobic cultures for the detection of pyogenic organisms.

The bacteria most commonly associated with lung abscess are fusiform bacilli and spirochetes. Smith,[4] reporting upon a study of a series of 135 cases of abscess of the lung, noted that organisms of the fusospirochetal group were the infecting agents in 74 per cent of cases and other pyogenic bacteria in 26 per cent. The latter group includes Staphylococcus aureus, Gram-negative rods, such as Klebsiella pneumoniae (Friedlander's bacillus), Escherichia coli, Proteus and Pseudomonas aeruginosa (pyocyaneus) and the Clostridia group of anaerobes. A mixture of bacteria may be present in the sputum, and decision with regard to the important agents with respect to pathogenesis may be difficult without repeated cultural studies. Cultural studies are particularly important, however, for occasionally the organism causing the abscess is one that is resistant to penicillin—Klebsiella pneumoniae or other Gram-negative bacilli. If these bacteria go undetected much valuable time will be lost, and an acute abscess curable by chemotherapy alone if begun promptly may progress to a chronic phase necessitating surgical intervention.

New Infections During Antibiotic Therapy

The occurrence of new infections arising during the course of treatment with chemotherapeutic agents has been well documented.[6] The effect of highly potent but specific antibacterial agents upon mixed bacterial flora, such as are present in the throat, bronchial tree, intestine or wounds is well known. Penicillin therapy is frequently followed by predominance of Escherichia coli, Klebsiella, Proteus or Pseudomonas in the throat or sputum; and after treatment with streptomycin cultures of material from the throat may grow Staphylococcus aureus almost exclusively. Aureomycin and chloramphenicol therapy often leaves a predominance of Proteus or Pseudomonas in the sputum because of their resistance to those antibiotic drugs. Multiplication of these resistant bacteria occurs frequently, and since they are often virulent and invasive, new infections

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may occasionally follow. The mechanism by which this occurs is not entirely clear. It cannot be ascribed entirely to ecologic change in bacterial flora or merely to pronounced increase in the number of highly virulent bacteria, since these phenomena are observed frequently whereas new infection is uncommon. As new infection is relatively rare, use of combined antibacterial therapy is not justifiable. However, the possibility should be borne in mind when improvement does not occur or is only temporary, for proper treatment in such circumstances is readily effective. Well chosen bacteriologic studies will usually demonstrate such an occurrence with little difficulty.

Penicillin-resistant Staphylococci

One of the broad problems related to the widespread use of antibiotics which is of particular importance in the treatment of chronic bronchopulmonary suppurative disease is concerned with the increased incidence and significance of staphylococcal infections and particularly the increase in penicillin-resistant staphylococci. It was early recognized and later confirmed that the development of penicillin resistance in vivo during treatment occurred infrequently. It was noted, however, that Staphylococcus aureus associated with bacterial endocarditis, osteomyelitis or wound infections did develop resistance, and in the last few years there has been an increased incidence of penicillin-resistant staphylococci and infections due to these bacteria. Barber and Rozwadowska-Dowzenko presented data concerning the increasing incidence of penicillin-resistant staphylococci.[1] They reported that during the period of April-November 1946, 14.1 per cent of the cultures of Staphylococcus aureus were penicillin-resistant, whereas during February-June 1948, 59 per cent of cultures of these bacteria were penicillin-resistant. The importance of penicillin therapy in this phenomenon is emphasized by the observation that the incidence of penicillin-resistant staphylococci cultured from patients in the out-patient department or at the time of admission to the hospital occurred with approximately the same frequency as previously, whereas increased incidence of these resistant staphylococci was noted in cultures of material taken from the noses of attendants, nurses and physicians in the hospital who probably had acquired such bacteria from penicillin-treated patients, and who probably in turn transmitted the hardier organisms to other patients.

The conclusion may be justified that staphylococcal infections in patients who have neither received penicillin nor been hospitalized for appreciable periods can still be expected to respond as usual to penicillin in average dosage. Among the other groups a pronounced increase in therapeutic failures can be expected. Awareness of this phenomenon is of importance in order that the drug sensitivity of these bacteria may be determined and a higher dosage of penicillin or other antibacterial agents may be used if therapeutic response is inadequate. Fortunately most varieties of Staphylococcus aureus are sensitive to low concentrations of aureomycin. Preliminary results in the treatment of penicillin-resistant staphylococcal sepsis with aureomycin are encouraging.

These considerations are of particular importance in chronic pulmonary disease because of the increased incidence of coagulase-positive Staphylococcus aureus in cultures of sputum. Finland[3] pointed out that in the majority of patients no striking disease picture appears to result from the staphylococci present, but that in occasional patients large numbers of staphylococci are associated with grossly purulent sputum either with or without acute constitutional symptoms or x-ray evidence of an infiltrative pulmonary process. These observations may be of importance in essentially two situations. First, if the patient does not respond to penicillin in average dosage, particularly if procaine penicillin preparations are employed, penicillin-resistant staphylococci may be involved. If these organisms are present in appreciable numbers or as the predominant organism of the sputum, aureomycin therapy should be instituted promptly and, depending on the gravity of the situation, sensitivity tests performed. Second, if staphylococci are observed to be present in a patient with pulmonary suppuration, particularly if penicillin has previously been administered or the patient has been in a hospital environment for a prolonged period, aureomycin rather than penicillin may well be the agent of first choice.

The Nature of Suppurative Lesions in Relation to Chemotherapy

The importance of determining the bacterial agent and then promptly starting the best antibacterial therapy particularly in acute pulmonary suppuration is emphasized by the nature of the pathologic lesion in these processes. The effectiveness of chemotherapy in all infections, in the lung as well as elsewhere, is greatly affected by the speed and degree to which significant tissue necrosis occurs. The acute pneumonia produced by the pneumococcus is usually characterized by persistent viability of the essential anatomical framework of the lung which is necessary for resolution and repair. The bacteria previously mentioned as commonly responsible for pulmonary abscess and later bronchiectasis also produce an acute pulmonary process which in the early phases does not greatly alter the usual pulmonary architecture, but which later causes rapidly progressive anatomical destruction with loss of blood supply and tissue necrosis. This loss of structure makes the problem of control of infection and healing difficult. Diffusion of chemotherapeutic agents into areas of necrosis with poor blood supply may be considerably impaired and the chemical constituents of the exudate may interfere with the action of these agents. Destruction of normal architecture introduces mechanical problems in healing which may be insurmountable and result in cavities or areas of bronchiectasis which may then be foci for further extension of disease. Since almost all of the bacteria in question are relatively sensitive to one or more of the antibiotic agents it is of the greatest importance to determine promptly the pathogenic agent and apply specific anti-infective therapy at once.

TREATMENT OF ABSCESS OF THE LUNG

The liberal use of antibacterial agents has prevented the development of pulmonary abscess in many instances, and in others has made the disease less severe. When properly applied, antibiotic therapy has been so satisfactory in controlling at least the acute constitutional signs of sepsis that the necessity for surgical drainage of an acute abscess of the lung has almost disappeared. The size of an abscess, as observed in x-ray films, should not influence the nature of treatment. A large abscess cavity with a wide expanse of fluid does not necessarily indicate a large area of tissue necrosis; these features may be caused by obstructive emphysema. Rapid disappearance of such a cavity may occur after relief of bronchial obstruction by bronchoscopic aspiration, or after subsidence of edema with establishment of bronchial drainage following adequate chemotherapy.

Once the diagnosis of abscess has been established, and the sputum has been examined to ascertain the bacterial flora, anti-infective treatment should be started at once. When the infection is due to predominantly Gram-positive organisms or to bacteria of the fusospirochetal group, penicillin should be used. When the infection is a mixed one, in which significant numbers of Gram-negative bacilli are also present, or when the latter are the predominant organisms, combined intramuscular treatment with penicillin and streptomycin should be employed, or one of the newer antibiotics (aureomycin, chloramphenicol, terramycin) may be given. Systemic administration should be supplemented by aerosol inhalations. Because abscess of the lung most often is caused by fusospirochetal organisms or Gram-positive cocci, penicillin is a satisfactory antibacterial agent in the vast majority of cases. Treatment should be intensive. Aqueous crystalline sodium or potassium penicillin preparations should be used intramuscularly in doses of 200,000 to 400,000 units every four hours — 1,200,000 to 2,400,000 units daily. As abscess of the lung is an acute emergency, reliance should not be placed upon procaine penicillin preparations until a satisfactory clinical and roentgenographic response has been obtained with the more certain aqueous penicillin preparations.

Some observers have advocated combined use of sulfadiazine and penicillin in spite of the ineffectiveness of sulfadiazine alone in the treatment of fusospirochetal pulmonary abscess before penicillin was available. Insufficient data are available to justify a categorical statement regarding the combination. It is the author's opinion that sulfadiazine is of little importance except in two situations: First when, after a period of penicillin therapy, invasion of diseased tissue by Gram-negative bacilli occurs; and, second, when the initial infective agent is one of the Klebsiella (Friedlander's bacillus) group. The value of sulfonamides even in these instances can be greatly discounted now that aureomycin, chloramphenicol and terramycin are available.

A number of investigators have reported varying results with use of neoarsphenamine in the treatment of acute pulmonary abscess. The wide variation in the results of treatment with arsenicals may be partially due to differences in the kinds of cases treated. With the advent of satisfactory antibiotic agents that entail little if any risk of toxicity, the applicability of neoarsphenamine to the treatment of acute lung abscess has been eliminated.

Streptomycin is indicated for treatment of abscesses of the lung, few in number, caused by Gram-negative bacilli. Klebsiella pneumoniae is the most common and important member of this group. Proteus, Pseudomonas or Escherichia coli may also be the predominant organism less commonly. These bacteria, particularly Klebsiella, may be the primary etiologic agent, or they may become predominant after a prolonged period of penicillin administration. Demonstration of these bacteria in significant numbers before antibiotic therapy is, therefore, important since otherwise they may represent merely secondary invaders of doubtful or low grade pathogenic significance.

If a change in the bacterial flora of the sputum occurs during chemotherapy, with the consequent appearance of bacterial pathogens not susceptible to the anti-infective agent being used, there may be either a lag in clinical response to therapy or an acute exacerbation of constitutional signs of sepsis, with or without extension of pulmonary disease. Should these events occur in the course of penicillin therapy, cultural studies of the sputum should be initiated and streptomycin should be added to the chemotherapeutic program. Penicillin may or may not be discontinued at this point, depending upon the previous duration of therapy and progress of the disease. Streptomycin should be administered intramuscularly in a dosage of 0.5 gm. every six hours. Whereas combining sulfonamides with penicillin has seemed to add little to the therapeutic effect in instances such as these, when streptomycin is indicated, combining sulfadiazine with it appears rational. Experimental evidence indicates the advantage of combined streptomycin and sulfadiazine in the therapy of infections with Klebsiella. Clinical experience suggests a beneficial effect from sulfadiazine in the treatment particularly of chronic pulmonary suppuration associated with bronchiectasis, emphysema, etc., in which Gram-negative bacilli may be present. One of the newer antibiotic agents may also be used in these circumstances. Chloramphenicol is possibly the best in this particular situation because of its somewhat greater activity against Proteus and Pseudomonas. It should be given for an initial period in a daily dose of 3.0 gm. Aureomycin or terramycin may also be effective if Klebsiella or Escherichia coli are the predominant bacteria.

The value of aureomycin, chloramphenicol, and terramycin is not known precisely because of lack of sufficiently broad experience in their use in this disease. Scattered reports of the successful use of aureomycin in the treatment of abscess of the lung have appeared but it is impossible to make any comparative evaluation with penicillin. Careful observation

of treatment with terramycin has been reported in only a few cases. Several points are clear, however. First, aureomycin and terramycin are inhibitory in vitro against fusiform bacilli, anaerobic rods of the Bacteroides group and Spirochetes, which are of importance in the production of the anaerobic type of pulmonary suppuration. They likewise inhibit the pyogenic cocci, the pneumococcus, beta hemolytic streptococcus and staphylococcus, which cause lung abscess less frequently, as well as many strains of Klebsiella pneumoniae. On the basis of in vitro studies, therefore, these agents might be expected to be effective clinically. It should be emphasized, however, that the broad antibacterial spectrum of these antibiotics and, therefore, their apparent wide applicability to infections such as these, does not in any way negate the importance of determining the pathogenic agent. This is especially true because of the considerable variation in degree of susceptibility of Gram-negative bacilli to these agents. Second, these drugs have been proved to be clinically effective in a small number of cases of two kinds. The larger of the two groups was made up of cases in which penicillin and sulfonamides were ineffective and striking response occurred when aureomycin or terramycin was given. This occurred in some instances despite the fact that the predominant bacteria in the sputum were penicillin-sensitive. In a much smaller group there was satisfactory response when these agents were given initially, without previous chemotherapy. Third, following the use of these drugs, Proteus and Pseudomonas may become predominant, due to their resistance, and in some instances may be responsible for invasive infection. In such circumstances streptomycin and sulfadiazine combined must be used. In a few instances when the risk of acute infection is great or when sepsis is uncontrollable, the administration of potentially toxic agents such as neomycin or polymyxin may be followed by a satisfactory response. Even if this is only temporary it may permit appropriate surgical intervention.

Although the greatest value of aerosol treatment is in connection with chronic pulmonary suppuration (as discussed later) it should also be employed in the therapy of acute lung abscess. Cases have been reported in which response to intramuscular administration alone was unsatisfactory and the patient did not do well until penicillin or streptomycin aerosol was added. Bronchoscopic examination should always be performed as a diagnostic procedure, and local intrabronchial instillation of 100,000 units of penicillin (or streptomycin if the flora is Gram-negative) in 5 cc. of physiological saline solution should be carried out at the same time. The endotracheal method of treatment takes advantage of the gravitational flow of solutions into rigid suppurative foci which might not be penetrated by aerosol. Subsequent local therapy may be accomplished by aerosol administration of 100,000 units of penicillin dissolved in 1 cc. of physiological saline solution or 100,000 units of microcrystalline penicillin dust three to five times a day.

In the presence of suppurative necrotic foci, it is foregone that conservative treatment, even when it is effective, must be continued over a long period—several weeks, perhaps months—in order to prevent relapse. However, unless there is definite and continuing improvement in the first two to four weeks of adequate conservative therapy, surgical intervention should be considered, for delay in such circumstances might permit greater pulmonary damage and necessitate more radical operation.

The best time to begin conservative treatment is during the first four weeks of the disease. It should include administration of anti-infective agents, measures directed toward bronchial drainage, and general supportive therapy. If the patient makes satisfactory progress, treatment should be continued until constitutional symptoms of sepsis and local symptoms of bronchopulmonary suppuration have abated and there are no roentgenographic abnormalities in the segment of lung involved.

The criteria of cure of abscess of the lung suggested by Touroff[5] apply equally well whether medical or surgical treatment is employed: The patient should be symptom-free and there should be no abnormality in a roentgenogram of the chest or a bronchogram.

If medical treatment is unsuccessful and the abscess becomes chronic, only rarely can chemotherapy effect cure. An abscess of three months' duration is usually characterized by a thick-walled cavity, bronchiectasis and chronic organizing pneumonitis. As restoration of anatomical relations approaching normality then is foreclosed, chemotherapy should be used only to prepare the patient for operation with respect to control of surrounding acute pneumonitis, control of constitutional signs of acute sepsis, reduction of the quantity of sputum, and prevention of systemic dissemination of infection during the preoperative period.

TREATMENT OF BRONCHIECTASIS

Bronchiectasis, an irreversible pathological process involving the bronchial tree and surrounding pulmonary parenchyma, has assumed increasing importance in recent years. With better methods of diagnosis it has been observed to be considerably more common than was previously supposed, and chemotherapy combined with improved thoracic surgical technique has completely changed the method of management of the disease. That the definitive treatment of bronchiectasis is surgical cannot be questioned, but only about half the persons with this disease are suitable candidates for operation. Many have extensive bilateral disease, which precludes surgical eradication. Medical measures may provide effective symptomatic relief for a large number of patients ineligible for operation. The proper use of penicillin and other methods of treatment for pneumonia and infections of the sinuses is important in preventing the development and progression of the changes comprising bronchiectasis and in minimizing hilar fibrosis which increases the difficulty of dissection at the time of operation.

Although penicillin is important in the management of bronchiectasis, the effect is temporary. It is most useful in the control of acute respiratory infections associated with varying degree of pneumonitis which are frequent in patients with bronchiectasis, and for the preparation of patients for operation. The use of antibiotics should probably be reserved primarily for these situations. In the absence of acute constitutional signs of infection, providing adequate drainage should be the initial step in control of cough and sputum. Postural drainage is important, as are control of bronchospasm, if present, with aerosols of epinephrine (1 to 200 or 1 to 300) or Isuprel® (0.15 cc. of 0.05 per cent plus 0.5 cc. of saline solution), and facilitation of penetration of agents and liquefaction of sputum with wetting agents (Ceepryn,® nonionic type, three drops added to epinephrine) are all important. If the airway is cleared and adequate drainage is obtained, much infection will resolve or improve independently of chemotherapy. Antibiotics may then be reserved for acute exacerbations of infection or for use in cases in which such a program of conservative management is not effective.

Culture of the sputum should be carried out before antibiotic therapy is started. Although aerobic cultures are of greater importance in planning the chemotherapy of bronchiectasis than they are in the case of abscess of the lung, the other measures previously outlined for the detection of tubercle bacilli, organisms of the fusospirochetal group and the presence of yeast and fungi should be included in the bacteriologic studies. Since the bacterial flora is usually predominantly Gram-positive, penicillin, if it has not been employed previously, is usually the agent of choice. Procaine penicillin preparations may be employed in single daily doses of 600,000 units. Parenteral therapy should be continued until the acute constitutional signs of active infection are controlled. Occasionally Gram-negative rods may predominate. This is particularly significant if they are of the Klebsiella or Hemophilus groups although Proteus and Pseudomonas may occasionally appear to be of pathogenic importance. Streptomycin, or one of the newer antibiotics, is then the agent of choice, in daily doses of 1 to 2 gm. divided into two or four doses of 0.5 gm. each.

The importance of administration of antibiotic aerosols is well established. Although good results may follow parenteral therapy alone, in many cases substantial improvement does not take place until aerosol administration also is employed, and in others considerable additional reduction in sputum occurs after aerosol is used. After intramuscular injection, penicillin appears in the sputum of patients with bronchiectasis in only low concentration if at all, whereas high concentrations can be obtained by local use. The best results are obtained by intramuscular injection concomitantly with aerosol administration, particularly if acute pneumonitis accompanied by fever and large amounts of sputum is present. For aerosol therapy, 100,000 units should be administered four or five times daily. When the acute signs of sepsis subside, parenteral administration may be discontinued and aerosol therapy gradually diminished. If Gram-negative bacilli are present, particularly Klebsiella or Hemophilus, streptomycin should be employed both parenterally and by aerosol, with 100 mg. given by inhalation four to five times a day. Streptomycin-resistant Gram-negative bacilli frequently appear after three to seven days of this therapy.

Various methods have been described for aerosol therapy.[2] In one method a hand-operated bulb or foot pump supplies the power necessary to break up the aqueous solution into a mist, and in another compressed oxygen is used for the purpose. Although the hand bulb is readily available and simple, it does not produce a fine enough mist and its use is tiring to the patient. A third method of aerosol therapy employs micronized particulate penicillin dusts.

The particle size of atomized liquids or dusts is of extreme importance if these agents are to reach the recesses of the lungs. It has been shown that particles above 30 microns in diameter are mainly trapped in the trachea. Most atomizers produce particles of this size, and although they might be effective in the treatment of lesions of the trachea or larger bronchi, they would not reach lesions of the smaller bronchi or bronchioles. Particles 10 to 30 microns in diameter penetrate to the terminal bronchioles, and those ranging from 3 to 10 microns reach the alveolar ducts. Particles less than 3 microns in diameter reach the alveolar sacs but not all are retained in these areas. Particles smaller than 0.5 microns in diameter reach the alveolar sacs, but only about half of them are deposited in the lungs; the rest are contained in the expired air. Obviously it is important that an adequate proportion (by weight) of particles of liquid aerosol or dust reach the terminal bronchioles and alveolar ducts. The Vaponefrin® nebulizer, which is made of either glass or unbreakable plastic, produces a finely divided aqueous mist when powered with an oxygen flow of about 5 to 8 liters per minute. The particles are of such size that adequate amounts reach the bronchioles, yet many are large enough that they are not discharged with the expired air and a re-breathing bag is unnecessary. It is important that the atmosphere breathed in the initial phase of inspiration contain the mist. Otherwise much of it will be present in the dead space of the lung, and particles below 30 microns in diameter will be breathed out with the expired air. Equipment for carrying out aerosol therapy of this kind in the home is available. Penicillin may be obtained in small, readily dissolvable tablets that can be dropped through the vent in the nebulizer. A small volume of saline may then be added.

Penicillin powder pulverized to particles of suitable size is also satisfactory for reaching the recesses of the lungs by the inhalation route, although it is thought by some investigators to be less effective and more wasteful of drug than liquid aerosol.[2]

How long to continue treatment depends upon the effects obtained. Control of the acute episodes of pneumonitis is generally relatively rapid, but more

prolonged treatment is necessary to bring about subsidence of the chronic inflammatory process. While in some cases pronounced improvement may appear after the first week of therapy, some patients may not improve until after two to four weeks of treatment. The irreversible changes in the bronchial tree predispose to early and frequent reinfection. Often patients who have striking improvement during penicillin aerosol therapy have recurrence of cough and expectoration soon after treatment is stopped. Prolonged treatment with penicillin aerosol, or a succession of courses of four to six weeks each, appear to be indicated in many such cases. Improvement may be expected in 50 per cent to 75 per cent of patients, and by repeated treatment considerable rehabilitation may be achieved. Poorer results may be expected in elderly patients with emphysema and fibrosis, as transmission of the aerosol to the site of infection is impeded.

Oral reactions to penicillin aerosol—edema of the lips, stomatitis or glossitis, with the tongue either red or grayish-black—occur in some patients, sometimes after a few days of treatment, sometimes not until considerably later. The mechanism of such reactions is not known, but it is believed to be entirely a local effect. Rinsing the mouth and throat thoroughly and carefully with water or saline solution after each administration of penicillin aerosol decreases appreciably the incidence of this side effect.

The position of aureomycin, chloramphenicol and terramycin in the management of chronic bronchopulmonary suppuration is at best difficult to evaluate. The effectiveness of these drugs is most clear-cut in the treatment of acute exacerbations of chronic disease. In these circumstances a large proportion of patients will have significant or pronounced improvement, with decrease in fever, lessened amounts of sputum, change in character of the sputum from foul or purulent to mucoid, and usually gradual resolution of the pulmonary process as observed in roentgenograms. As in the case of all antiinfective agents, the results with these agents will depend upon the sensitivity of the bacteria involved, the degree to which bronchial drainage is occurring, and the nature and extent of the basic pulmonary lesion. What was said about these agents in the treatment of abscess of the lungs applies also to bronchiectasis. First, a large number of the bacteria that cause chronic pulmonary suppuration are susceptible to these newer antibiotics. Favorable response frequently is obtained when they are used. This is true particularly when the Staphylococcus or Gram-negative bacilli are predominant in the sputum, and when varying degrees of acute pneumonitis are present. Favorable response may be observed after failure has occurred with penicillin or streptomycin. Second, the rapid development of streptomycin resistance and the slow appearance of aureomycin resistance may be an important factor when therapy must be relatively prolonged. Third, susceptible bacteria are frequently eradicated rapidly from the sputum with clinical improvement, but resistant organisms, particularly in the Proteus, Pseudomonas and Klebsiella-Aerobacter group, frequently reappear thereafter. These bacteria may cause a continuing low-grade suppurative process, or actual acute exacerbations of disease.

REFERENCES

1. Barber, M., and Rozwadowska-Dowzenko, M. V.: Infection by penicillin-resistant staphylococci, Lancet, 2:641-4, 1948.

2. Committee on Public Health Relations of the New York Academy of Medicine: Standards of effective administration of inhalational therapy, J.A.M.A., 144:25-34, 1950.

3. Finland, M.: The present status of antibiotics in bacterial infections, Bull. N. Y. Acad. Med., 227:199-220, 1951.

4. Smith, D. T.: Medical treatment of acute and chronic pulmonary abscesses, J. Thoracic Surgery, 17:72-91, 1948.

5. Touroff, A. S., Nabatoff, R. A., and Neuhof, H.: Acute putrid abscess of the lung, J. Thoracic Surg., 20:266-271, 1950.

6. Weinstein, L.: Spontaneous occurrence of new bacterial infections during the course of treatment with streptomycin or penicillin, Am. J. Med. Sci., 214:56, 1947.

The Management of Abscess of the Lung

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SUMMARY

A review of the literature raises considerable doubt as to the advisability of surgical drainage of lung abscess as a definitive procedure. The mortality rate with use of this procedure and other hazards associated with it, must now be viewed in the light of improved methods of conservative therapy — involving the use of penicillin, bronchoscopic treatment and postural drainage—by which cure can be obtained in more than 80 per cent of cases of acute abscess and in a smaller proportion of cases of chronic abscess. Another factor to be considered is the better chance for diagnosis and effective resection of associated carcinoma when conservative treatment is employed.

THE treatment of abscess of the lung, either "acute and chronic," or "simple and complicated"—the terms are those preferred by Moore,[3] Overholt and Rumel,[17] and Neerken and Grow[4]—has now passed through two major phases, the era of conservatism and the era of external drainage. In the pre-antibiotic era, a shockingly high mortality rate—at least 30 per cent—was associated with conservative management, and many patients were left with chronic pulmonary disease. The doctrine of early external drainage was most strongly advocated by Neuhof and Touroff;[5, 6] and, applying it, they achieved a sharp decrease in mortality rate. In 1942 they reported upon the use of early drainage in 152 cases, with a mortality rate of 2.6 per cent. These results were not equalled by other investigators, however. Even Shaw,[8] an equally enthusiatic advocate of one-stage drainage, reported a mortality rate of 15.2 per cent. Smith,[10] in a review of collected reports of 744 cases in which surgical treatment was used, noted that the mortality rate was 32.7 per cent—only slightly better than the death rate of 34.7 per cent in 906 cases in which conservative therapy was employed. Bosher[1] recently reviewed the surgical treatment of abscess of the lung at Barnes Hospital through the years 1943-1948. The overall surgical mortality from drainage was 30 per cent.

In light of these unimpressive reported results and with effective antibiotic therapy and increased facility in pulmonary resection now available, the efficacy of external drainage as a definitive method of treatment must be seriously questioned. Certainly the disadvantages of surgical drainage, since they need no longer be accepted as unavoidable collateral results of the treatment, ought to be scrutinized. In the main, these disadvantages are:

1. Ineffectiveness in multiple, or complicated abscesses.

2. Hemorrhage. Although lung abscesses are almost always at the periphery they may be on fissure surfaces in close proximity to major vessels. Even those which are peripheral in relation to the chest wall may contain large vessels within trabeculae, since the vessels are the last structures to be destroyed.

3. Persistent bronchopleural cutaneous fistulae. If prompt healing does not occur, epithelization may proceed from both the bronchial and the cutaneous pole. Plastic procedures to close the fistulae are, in the main, ineffective and resection must be resorted to.

4. Residual bronchiectasis. Even with satisfactory healing of the abscess there may be sufficient change in the pulmonary architecture to result in symptomatic bronchiectasis of the area. This is one of the chief factors in the low rate of cure and in the development of postoperative morbidity.

5. Drainage, by inadvertence, of specific infections. For example:

Case 1.—A 30-year-old man was admitted to the hospital with a history of mandibular osteomyelitis of about a year's duration. Both external and internal drainage of the jaw were present. Chest pain, cough and discharge of purulent sputum developed about six weeks before admittance. In x-ray films an abscess cavity in the apex of the left lower lobe was noted. Multiple concentrated smears of the sputum were negative for acid-fast bacilli. Conservative therapy was carried out without appreciable change in the appearance of the abscess. Five weeks after the patient was admitted, cultures of gastric material were reported as positive for tubercle bacilli. Early drainage would have been undesirable.

Case 2.—A man 28 years of age was admitted with a history of recent moderately severe hemoptysis, cough, and purulent sputum. An abscess cavity in the apex of the right lower lobe was noted in x-ray films. The flora of the sputum were not diagnostic, but there was a 4 plus reaction to a coccidioidin skin test. At lobectomy the lesion was observed to be a coccidioidomycotic cavity with secondary infection. Again, external drainage would have been undesirable.

6. Empyema. Adhesions present between the lungs and the wall of the chest may rupture afer operation for drainage (even though apparently they were of adequate extent at the time drainage was carried out) thus contaminating the pleural space, often with considerable pulmonary collapse due to the large bronchopleural fistula.

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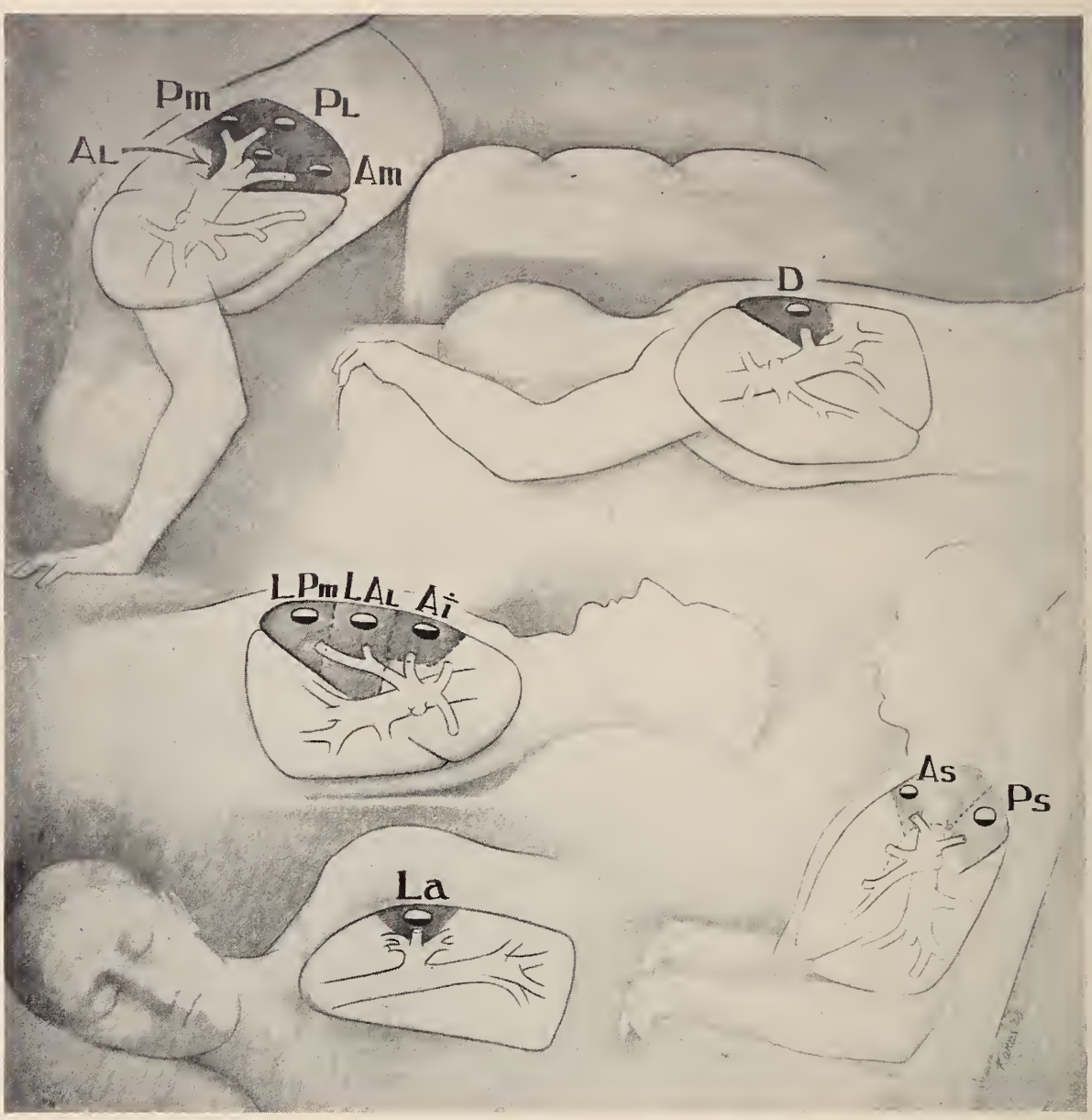

Figure 1.—Various positions for postural drainage; the location of the lesion dictates the position.

7. The drainage of unsuspected carcinoma. The greatest danger of surgical drainage is in opening into a carcinoma or overlooking its presence. If there is central necrosis of the tumor, recognition of the lesion is easy, but dissemination along the track may have occurred. If the tumor is small and the abscess is distal, the lesion may go unsuspected for weeks, or even months, and may be inoperable when it becomes obvious.

VIGOROUS CONSERVATIVE TREATMENT

The present regimen, designed to avoid these complications, consists of vigorous conservative treatment, comprising: (1) Penicillin in high dosage, perhaps with other antibiotic or sulfonamide therapy. (2) Bronchoscopically directed application of antibiotics and treatment of the swollen draining bronchus as often as necessary, usually twice a week. This procedure also helps to determine the site of the lesion and to rule out carcinoma or the presence of a foreign body. (3) Postural drainage, which, to be effective, requires a knowledge of the bronchopulmonary segments and accurate localization of the lesion. The posture must be tailored to the individual case (Figure 1). For example: Abscesses in the apical lower lobe segments are best drained by putting the patient in the prone position; for lesions of the upper lobe superior segments, the upright position is best.

The regimen outlined can be expected to accomplish:

1. Healing in 80 per cent or more of cases of acute or simple abscess.

CASE 3.—After herniorrhaphy a patient had symptoms of lung abscess, and in x-ray films an abscess cavity in the apex of the right lower lobe was noted. Penicillin, 100,000 units every three hours, was given. In bronchoscopic examination, edema and stenosis of the right dorsal bronchus was observed. This was treated twice weekly with epinephrine and direct application of penicillin by bronchoscope. For drainage, the patient was put in the prone and then in the supine position for alternate hours during the day. Prompt healing occurred. In an x-ray film a month after the onset of symptoms, only residual enlargement of the hilar nodes was noted, and in a film taken four months later there was no evidence of residual disease.

2. Healing in a smaller percentage of cases of chronic abscess.

CASE 4.—A man 61 years of age entered the hospital with a history of the onset of hemoptysis, fever and copious foul sputum six months previously. The body weight had decreased 40 pounds, and lassitude and pronounced anorexia were noted. An abscess in the apex of the left lower lobe, with a wide surrounding area of pneumonitis, was noted in x-ray films. There was suspicion of neoplasm also, but in bronchoscopic examination only edema and pin-point stenosis of the left dorsal bronchus were observed. As the patient was too ill for resection, the regimen outlined in Case 3 was followed. Improvement was so pronounced and rapid that the presence of a tumor was felt to be unlikely. The bronchoscopic therapeutic procedures were carried out twice weekly for two months, then once a week for another month. In an x-ray film taken 13 weeks after the first treatment, virtually complete clearing was noted. The patient was observed at three-month intervals for the succeeding two years. He remained free of symptoms.

3. Sufficient clinical improvement to permit resection without the complications of previous drainage.

CASE 5.—A 57-year-old patient, an habitual user of alcohol, was admitted to the hospital, chronically ill. Copious amounts of foul sputum were discharged. In x-ray films, extensive pneumonitis, fluid and an abscess were noted in the right upper lobe. The patient had been admitted two years previously, and in an x-ray film taken at that time the conditions observed were almost identical. At that time the patient had refused treatment and had left against advice. In the present illness a single bronchoscopic procedure for examination and treatment was carried out. No appreciable bronchial stenosis was noted. Penicillin was given, and for postural drainage the patient remained in Fowler's position day and night. After seven weeks of treatment the discharge of sputum had abated and the abscess and most of the associated pneumonitis had cleared. Right upper lobectomy was then performed. The operation and subsequent course were uneventful. Save for the prolonged period of preparation, the operative risk and danger of postoperative complications would have been considerably greater.

In addition, the method of treatment outlined is helpful in determining whether malignant disease is or is not present, for although pneumonitis distal to a carcinoma often improves definitely, seldom does it clear as quickly as it does when the abscess is non-neoplastic. If improvement does not occur promptly, or if clearing is incomplete, lobectomy-biopsy is usually indicated.

Two patients, one 61 years of age, the other 58, had symptoms of abscess of the lung. Both had good clinical response to treatment, but in neither case was clearing, during a two-week observation period, as great as was to be expected with simple abscess. Both were subjected to lobectomy-biopsy. One had a carcinoma 1 cm. in diameter obstructing a segmental bronchus; the other had pneumonitis with bronchiectatic changes.

Aside from the opportunity of increasing the chance of cure in carcinoma, the wisdom of choosing resection rather than surgical drainage in cases in which there is not good response to nonsurgical measures, has been indicated by a number of reports which have recently appeared in the literature. Not only is the mortality rate definitely lower, but the incidence of cure—that is, recovery without chronic disease—is considerably higher. Neerken and Grow[4] subjected 38 patients to resection with a mortality rate of 7.9 per cent. Shaw,[6] and Shaw and Paulson,[9] by increasing the use of resection reduced the mortality rate from 15.2 per cent to 3.5 per cent and increased the cure rate from 57.6 per cent to 82.7 per cent. Kent and Ashburn had similar experience. In a relatively few cases, conservative therapy is ineffective, and in such cases surgical drainage must be carried out, either with a view to cure or in preparation for resection.

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REFERENCES

1. Bosher, L. H., Jr.: A review of surgically treated lung abscess, J. Thoracic Surg., 21:370-376, April 1951.

2. Kent, E. M., and Ashburn, F. S.: Pulmonary resection for chronic lung abscess, J. Thoracic Surg., 17:523-529, Aug. 1948.

3. Moore, R. L.: Pulmonary abscess, a surgical problem, Ann. Surg., 116:373-386, Sept. 1942.

4. Neerken, A. J., and Grow, J. B.: Pulmonary resection for lung abscess, J. Thoracic Surg., 18:738-741, Oct. 1949.

5. Neuhof, H., and Touroff, A. S. W.: Acute putrid abscess of the lung, J. Thoracic Surg., 9:439-449, April 1940.

6. Neuhof, H., and Touroff, A. S. W.: Acute putrid abscess of the lung, hyperacute variety, J. Thoracic Surg., 12: 98-106, Oct. 1942.

7. Overholt, R. H., and Rumel, W. R.: Factors in the reduction of mortality from pulmonary abscess, New Eng. J. Med., 224:440-454, Mar. 13, 1941.

8. Shaw, R. R.: Pulmonary abscess; value of early one-stage operation, J. Thoracic Surg., 11:453-466, April 1942.

9. Shaw, R. R., and Paulson, D. L.: Pulmonary resection for chronic abscess of the lung, J. Thoracic Surg., 17:514-522, Aug. 1948.

10. Smith, D. T.: Medical treatment of acute and chronic pulmonary abscesses, J. Thoracic Surg., 17:72-90, Feb. 1948.

Diagnostic Problems of Cancer of the Lung

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SUMMARY

There are three techniques of primary significance to the diagnostic problems of cancer of the lung.

Roentgenologic evidence is suggestive but not conclusive unless confirmed by other means. Because pulmonary cancer masquerades, morphologic proof is needed.

In some cases bronchoscopy can provide proof, but its usefulness is limited to lesions in the major bronchi.

For the third technique, cytologic study, to be effective, apparently it is necessary only that there be a free passageway between the trachea and the tumor body.

Cytologic studies were carried out in 2,066 cases of all types of diseases of the chest. In 241 of these cases bronchogenic carcinoma was proved by one means or another; the presence of cancer was diagnosed by cytologic methods in 55 per cent of the 241 cases. When five specimens of sputum from each patient were examined, the efficiency of the technique rose to 90 per cent.

Wider application of this simple and relatively inexpensive technique may greatly aid in the solution of diagnostic problems of pulmonary cancer.

EVEN if the apparent increase in the incidence of cancer of the lung should prove to be an illusion owing to improved clinical diagnosis and an aging population, the fact remains that this disease is rapidly becoming one of the most urgent problems in modern medicine. As nearly as can be judged, the number of deaths from pulmonary cancer in every year since 1940 has increased from 5 to 10 per cent over the previous year. It was estimated that over 13,000 people in the United States died of the disease in 1950, and there is every reason to anticipate further increase. As about three-fourths of those who died of cancer of the lung were men over 40 years of age, it is obvious that the disease rivals, and will perhaps exceed, tuberculosis as the chief cause of death in adult males.

Cancer of the lung is not a hopeless condition; a large number of five-year "cures" by means of total pneumonectomy have already been recorded.[2, 7] The surgical techniques involved in pneumonectomy have been constantly improved until almost any patient who is not acutely ill is able to withstand the operative procedure. A number of surgeons, exercising a minimum of selection so far as age and physical condition are concerned, have reported operative mortality of less than 10 per cent in large series of patients. The operation today frequently includes procedures not carried out fifteen years ago; invaded areas of the diaphragm, of the chest wall and even of the pericardium may be removed with one lung.

It would seem, however, that further important advances in surgical and anesthetic techniques for pneumonectomy are unlikely, and no great increase in the number of "cures" can reasonably be expected to result from improvements in these procedures. Surgeons and anesthesiologists have gone about as far as they can in the treatment of bronchogenic carcinoma, and the over-all five-year survival rate remains considerably less than 10 per cent.

Because carcinoma of the lung metastasizes so readily, many patients are beyond the help of surgical treatment before the first symptom appears. More efficient diagnosis, then, appears to be the key to increasing the survival rate.

The diagnostic problem in lung cancer, however, is made unusually difficult by the fact that the tumor itself, so long as it has not fatally extended into adjacent structures, and so long as it is not complicated by secondary conditions, produces in many instances minimal signs and symptoms, or none at all. The patient may notice a persistent wheeze resulting from a partially occluded bronchus, and he may vaguely be aware of a moderate loss of strength and loss of weight. After atelectasis has developed, there may be some dyspnea noticeable. He is not likely to seek medical attention for such minimal symptoms. Consequently, in the majority of cases, cancer of the lung first comes to medical attention when some secondary, symptom-producing condition has developed. Such secondary conditions quite commonly thoroughly mask the neoplasm.[8]

Until recently, diagnosis of bronchogenic carcinoma depended primarily upon direct vision by means of the bronchoscope and indirect roentgenological visualization. Without minimizing their usefulness, it must be recognized that both techniques have limitations. Fluoroscopic and roentgenologic examinations are generally the first diagnostic aids utilized when there are symptoms and signs of a pathologic process in the thoracic cage. They will confirm the presence of an abnormality in most cases. Unless the tumor body is very small and there are no secondary processes, some pathologic lesion

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will be evident. However, roentgenologic appearances are not specific. Most commonly, atelectasis will be clearly evident, but the tumor may be concealed in the collapsed portion of the lung. Secondary infectious processes very often completely mask the tumor body itself. At times the neoplasm is visible, but appears only as strands along the usual lung markings.

Unless it is recognized that roentgenologic evidence must be subjected to careful evaluation, it can frequently mislead. It is invaluable in establishing that there is a pathologic process present, but it will oftentimes not reveal small uncomplicated tumors. Consequently, a roentgenologic report that no lesion was observed cannot be regarded as excluding bronchogenic carcinoma in the presence of symptoms. If routine roentgenograms are supplemented by tomographic studies and lordotic films, the radiologist will usually be able to distinguish between a neoplasm and infectious process with some confidence. But, even so, roentgenologic evidence alone cannot be depended upon for this distinction. If the patient is a man in the cancer age group, a diagnosis of a non-malignant tumor should be questioned until all attempts to prove malignancy by morphologic means have failed.[6]

On the other hand, the evidence provided by roentgenograms must not be underrated. Morphologic proof of malignancy is always desirable, but there is no means at present whereby it may infallibly be secured. Consequently, an exploratory thoracotomy must sometimes be undertaken when the evidence that a malignant growth exists is primarily roentgenologic.

The usefulness and the limitations of roentgenology in the diagnosis of bronchogenic carcinoma are matters upon which there is more or less general agreement. The potential contribution of bronchoscopy, on the contrary, is widely debated, even though the technique has been in general use for many years. It has been claimed that morphologic evidence of cancer, or reasonably presumptive evidence, can be obtained by bronchoscopy up to 60 per cent of the time. Other studies suggest that bronchoscopy can contribute important information much less frequently—only about 30 per cent of the time. The authors have not been able to establish a diagnosis of bronchogenic carcinoma by means of bronchoscopy alone in more than one-third of cases in which the disease was present.

A technique which permits diagnosis even in one case out of three is, of course, very useful. There is, however, a further question: Does bronchoscopy contribute materially to the discovery of early and operable lesions? It has been stated that "the higher the incidence of positive bronchoscopic biopsies, the lower the number of operable patients." There are two chief difficulties. In the first place, there is an unfortunate inverse ratio observed in bronchoscopy. The nearer the tumor is to the carina, the more easily is it detected and identified by bronchoscopic means; also, the nearer it is to the carina, the less possibility there is of successful pneumonectomy. Peripheral lesions, which are most amenable to operation when they are detected early, because there is no operative difficulty with the bronchial stump and because they less readily involve other vital structures, are entirely outside the range of the bronchoscope. In the second place, physicians frequently hesitate to recommend so elaborate a procedure for minimal signs and symptoms. It is possible, by a program of education, to increase the diagnostic application of bronchoscopy. Its apparently inherent limitations, however, militate against its becoming the kind of routine screening device that is required for any major improvement in the survival rate associated with bronchogenic carcinoma.

The third major technique that has been applied to the diagnosis of bronchogenic carcinoma is cytologic examination of the sputum or bronchial secretions. Developed by Papanicolaou and Traut for use in the diagnosis of cancer of the genital tract in women,[10] its modern application to the problem of cancer of the lung began in 1946.[3, 5, 9] In the short space of five years it has proved of major importance. When certain well-defined conditions are met, it permits a morphologic diagnosis of bronchogenic carcinoma which is as accurate as diagnosis by biopsy. It is, further, the most sensitive technique so far developed.

Cytologic diagnosis is possible because malignant growths tend to throw off large numbers of free cells into adjacent body fluids. This has long been known; such cells when they are released into the blood stream or the lymphatic system are presumably the origin of metastases. A diagnosis of bronchogenic carcinoma depends upon the recognition of such cells in the sputum or bronchial secretions.[5]

In the past four years, the sputum of 2,066 patients with benign and malignant diseases of the lung was examined by this method in the laboratory. Eighty-five per cent of these patients were followed to a definite clinical or pathologic diagnosis. In all cases the cytologic studies were carried out without information as to the clinical status of the patient; the diagnosis was made solely upon the appearance of free cells in the sputum or bronchial specimens. In this group, 241 patients were proved by one means or another to have bronchogenic carcinoma. A positive cytologic diagnosis was made in 55 per cent of the 241 patients. The correct diagnosis was made in 90 per cent of cases when sputum samples were adequate[4]—that is, when the laboratory was provided with fresh sputum samples on five different days.

In addition to this impressive sensitivity, the method has the further advantage of simplicity. The sputum can be collected by the patient, preferably upon awakening in the morning, and smears can be made by a nurse or technician. It is desirable that sputum should be prepared within three hours after being raised, but diagnosis can be made from sputum that has stood for as long as ten hours if the cells have not dried. It is thus perfectly feasible to have a patient suspected of bronchogenic carcinoma

collect the sputum upon arising in the morning and deliver it to the physician's office on his way to work.

The most satisfactory smears result when the sputum is poured upon a watch glass placed against a dark background. When this is done, suspicious flecks of material can be selected for examination. In the authors' experience, malignant cells are most likely to be found in opaque, granular bits of sputum which are white to yellow in color, or in flecks of blood. Care, and some experience, is necessary to distinguish flecks of tissue from food particles.

The suspect material that is selected is then smeared upon three slides which have been previously wiped and marked. The smears must not be permitted to dry; instead, they should be immersed immediately in a fixative solution consisting of equal parts of ether and 95 per cent alcohol. When the slides are to be sent elsewhere for staining, they must be left in the solution for two hours. After this immersion, the slide should be air-dried and prepared for shipping. An interval of seven days can elapse between fixing and staining without any loss of significant cell detail. Particular care must be taken after smearing to prevent slides from coming into contact with each other.

The authors believe that cytologic examination is the most effective approach to accurate and early diagnosis of bronchogenic carcinoma that has yet been developed, but it too has its limitations. It will probably be some time before adequate facilities are widely available. As there is no single criterion indicating malignancy of free cells, diagnosis depends upon expert evaluation of findings. Further, the criteria which have been developed for cytology are by no means identical to the criteria for diagnosis from tissue sections, and therefore physicians must have special training and experience with the technique. These qualifications can be expected to delay the universal application that results so far seem to justify. Further, there is an irreducible element of chance. Not every collection of sputum will contain cancer cells; and since the entire specimen is not smeared, there may be cells in the discarded portion.

Experience to date suggests that this element of chance is minimized when the number of samples is increased to five. On one occasion, no malignant cells were observed until the nineteenth sputum collection, but in general, accuracy is not appreciably increased by an increase in the number of samples beyond five. In a small percentage of cases, certain factors interfere with the shedding of cells into the sputum—for example, a blocked bronchus proximal to the tumor.

It seems beyond doubt, however, that by a conscientious examination of five sputum samples, cancer of the lung can be diagnosed with a minimum of delay in 90 per cent of cases. This is a substantial improvement over any other technique available. Furthermore, since it is a morphologic diagnosis, it can be acted upon with a high degree of assurance. In the authors' experience with 2,066 cases, which included almost every known kind of non-malignant lung disease, the sputum samples were falsely reported to be positive for bronchogenic carcinoma in only two cases. Both of these errors occurred early in the series before the criteria for malignancy had been sharply formulated.

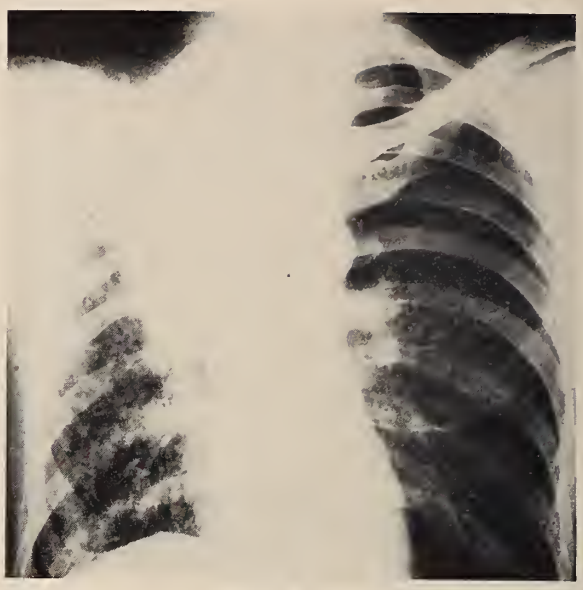

Figure 1

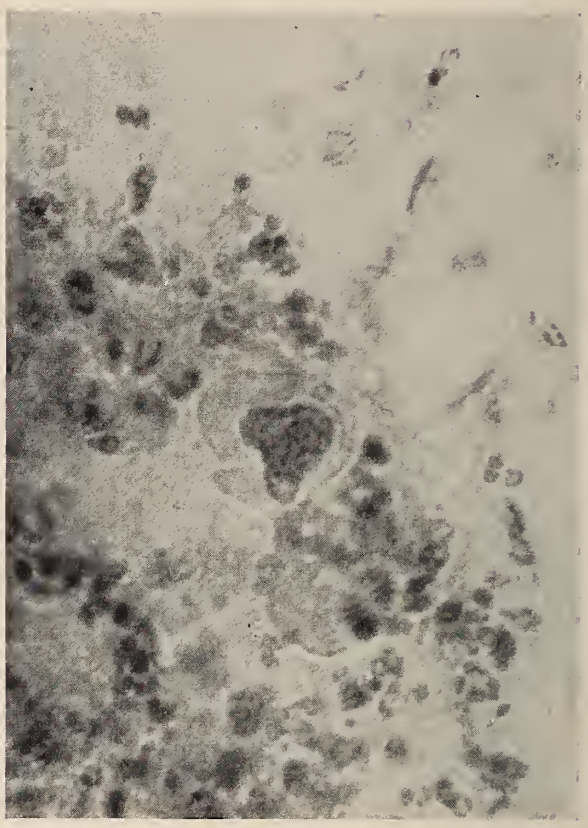

Figure 2

A cytologic diagnosis does not necessarily carry implications regarding operability, as a bronchoscopic diagnosis sometimes tends to do. The detec-

tion of cancer cells in the sputum does not depend upon the closeness of the tumor to the trachea; in fact, one of the great values of the procedure is its applicability to the diagnosis of peripheral lesions. Because it is simple and relatively inexpensive, it can easily be used as a routine screening procedure for any patient in whom cancer of the lung seems even a remote possibility.

The detection of free tumor cells in sputum does not depend upon the size or the age of the neoplasm. In experimental work with rabbits, it was noted that such cells usually appeared in the trachea within three weeks of the time of transplantation of tumor tissue.[1] Such cells were detected in tracheal swabbings in all instances within six weeks of transplantation. In these experiments, recognizable tumor cells were detected before the tumor body was macroscopically visible at autopsy. These experimental results confirmed the clinical observation that an early tumor is at least as likely to be detected by cytologic studies as a late one.

Cytologic examination represents, then, a major contribution toward the solution of diagnostic problems of cancer of the lung, but it is not in itself a solution. Diagnosis must still depend upon clinical judgment and careful evaluation of findings.

The four case histories which follow exemplify the problems and pitfalls. In all cases, roentgen evidence of disease of the chest eventually developed. Bronchoscopic biopsy was possible in only one of the cases, and in that case the need for endoscopic examination was indicated by the observation of malignant cells in the sputum.

In three of the four cases, cytologic studies established a morphologic diagnosis of cancer preoperatively. In the fourth case, only two specimens of sputum were obtained, which constitutes an incomplete examination. The negative result of the (incomplete) examination in that instance in no way forestalled exploratory thoracotomy which led to successful pneumonectomy.

Case 1.—A 54-year-old white male sign-painter was admitted to the University of California Hospital in February 1948. In 1945 a dry, hacking cough had developed and later it became productive. Some time thereafter pain developed in the upper portion of the right side of the chest. About six months after the onset of the cough, a physician diagnosed "congested lungs" and advised a higher altitude. Right pleural effusion developed in 1947; in 1948 the patient was referred to a tuberculosis sanatorium. When examined, he was emaciated and dyspneic. There was dullness over the right upper chest, with diminished voice sounds, coarse rales and increased tactile fremitus. The liver was enlarged. In an x-ray film of the chest a large homogeneous density was observed in the upper one-third of the right hemithorax (Figure 1), with areas of decreased density within it. Results of cytologic examination of smears of the sputum were positive for carcinoma (Figure 2). At bronchoscopy, the carina was observed to be deformed and the right main bronchus constricted, but biopsy was negative for carcinoma. Smears taken at bronchoscopy, however, were positive for malignant cells. In exploratory thoracotomy the tumor was observed to have grossly involved the chest wall and mediastinum, and pneumonectomy was not performed. The patient died one month after operation.

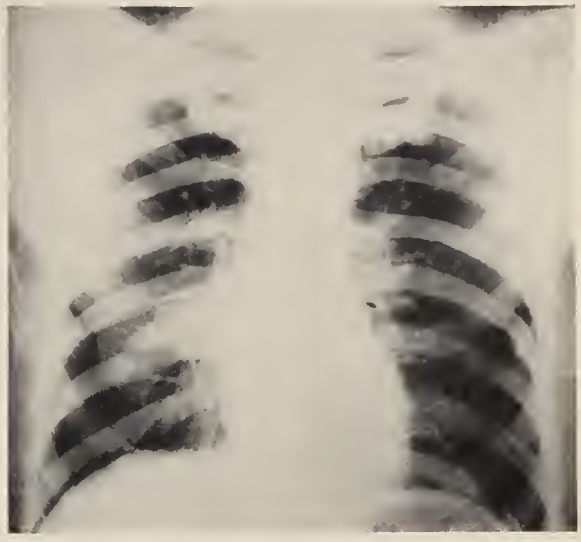

Figure 3

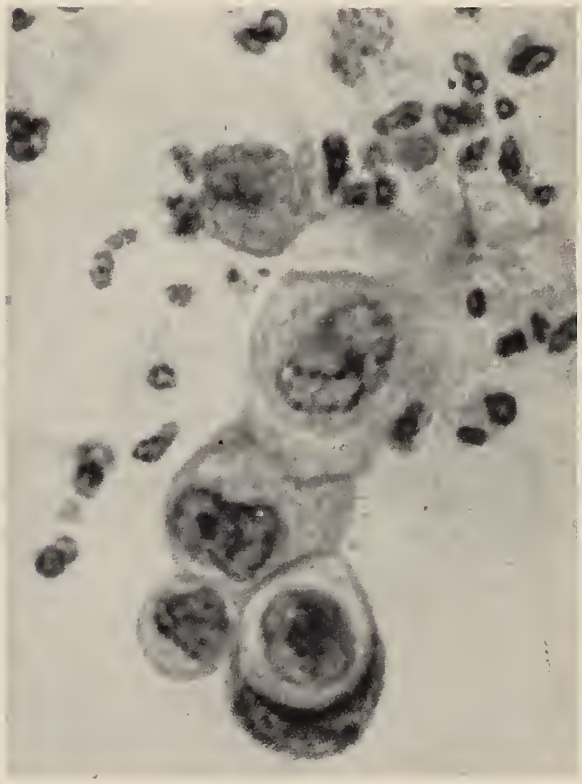

Figure 4

Case 2.—A 48-year-old Hawaiian porter was admitted to the San Francisco Hospital in October 1947 for ulcer of the leg with a history of cellulitis, lymphangitis and lymphadenitis of the leg. At the time of a previous admittance, in June 1946, x-ray films of the chest were taken and in them it was noted that there was right hilar enlargement with minimal densities in the right apex, "which may be an old acid-fast infection." When he was readmitted, the patient reported a productive cough of one year's duration, with sputum that was occasionally blood-streaked. A decrease of 20 pounds in body weight in that period also was reported.

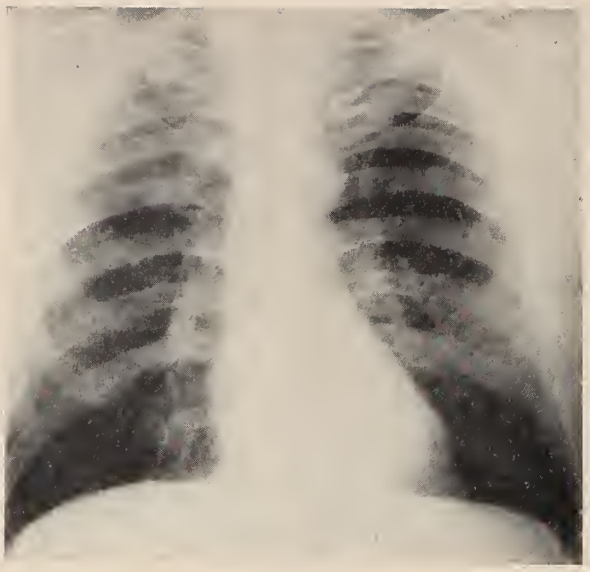

Figure 5

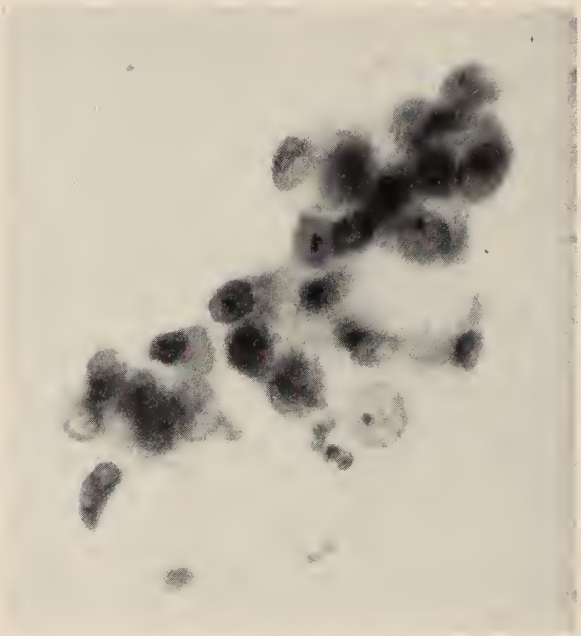

Figure 6

Upon physical examination, clubbing of all extremities was noted. In an x-ray film a small mass in the right hilum, with an area of infiltration surrounding it, was observed (Figure 3). The trachea was slightly displaced to the right. In studies of the sputum malignant cells were noted (Figure 4). At bronchoscopy, a half-dozen white raised projections were observed in the right lower lobe bronchus; these proved to be epidermoid carcinoma. Pneumonectomy was successfully performed a week after diagnosis, and the patient made uneventful recovery. A month later, however, he was returned in a moribund condition and soon died.

Case 3.—A 52-year-old white male advertising man was admitted in February 1949, with a history of hemoptysis. After the first attack, in 1947, he had been examined and no abnormalities were noted in bronchoscopic examination or in x-ray films. Four months later another episode of hemoptysis occurred, and three months after that, still another. Bronchoscopic examination was carried out again and no abnormality was observed. Six months later further hemoptysis developed, together with a severe pain in the chest and some dyspnea. Again bronchoscopic examination was fruitless, but in an x-ray film, density of the right third interspace was observed (Figure 5). Cytologic studies were done and malignant cells were noted (Figure 6). The right lung was removed shortly thereafter and papillary adenocarcinoma was observed in the upper lobe. The patient remained free of symptoms for about a year postoperatively, then a metastatic growth appeared on the left seventh rib. Eventual frontal lobotomy was required to relieve pain. The patient died two years after the operation.

Case 4.—A 62-year-old white male merchant was well until, two months before admittance in August 1950, he noticed loss of strength and energy. The history was normal except for possible tuberculosis of the right upper lobe 16 years previously, and mild but persistent pain in the right upper anterior area of the thorax for about a year before the examination. Upon physical examination, dullness at the apex of the right lung was noted. In x-ray studies a lesion in the upper lobe of the right lung was observed. When the presumptive diagnosis of reactivated tuberculosis could not be confirmed by a demonstration of bacilli in the sputum, further x-ray examination, including tomograms, was carried out and a large discrete area of density in the right apex was noted. Specimens of sputum were negative for malignant cells on two occasions; and in further bronchoscopic examination no pathologic change was observed. Nevertheless, the roentgenologic and clinical evidence was considered to overrule the negative results of morphologic studies, and exploratory thoracotomy was carried out. A large adenocarcinoma was found in the upper lobe, and right pneumonectomy was performed. At last report, nine months after the operation, the patient was alive and well.

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REFERENCES

1. Bronk, T. T., and Appel, M.: Intratracheal transplantation with the Brown-Pierce carcinoma, Cancer Research, 9: 228, April 1949.

2. Churchill, E. D.: Primary carcinoma of the lung, J.A.M.A., 137:455, May 29, 1948.

3. Clerf, L. H., and Herbut, P. A.: Diagnosis of bronchogenic carcinoma by examination of bronchial secretions, Ann. Otol. Rhin. and Laryng., 55:646, Sept. 1946.

4. Farber, S. M., McGrath, A. K., Jr., Benioff, M. A., and Rosenthal, M.: Evaluation of cytologic diagnosis of lung cancer, J.A.M.A., 144:1, Sept. 2, 1950.

5. Farber, S. M., Rosenthal, M., Alston, E. F., Benioff, M. A., and McGrath, A. K., Jr.: Cytologic Diagnosis of Lung Cancer, Charles C. Thomas, Publisher, Springfield, Ill., 1950.

6. Farber, S. M., Benioff, M. A., and McGrath, A. K., Jr.: Diagnosis of bronchogenic carcinoma by cytologic methods, Radiology, 52:511, April 1949.

7. Ochsner, A., DeBakey, M., and Dixon, J. L.: Primary cancer of the lung, J.A.M.A., 135:321, Oct. 11, 1947.

8. Overholt, R. H.: A common masquerading lung disease, Dis. of Chest, 9:197-211, May-June 1943.

9. Papanicolaou, G. N.: Diagnostic value of exfoliated cells, J.A.M.A., 131:372, June 1, 1946.

10. Papanicolaou, G. N., and Traut, H. F.: Diagnosis of Uterine Cancer by the Vaginal Smear, New York, Commonwealth Fund, 1943.

Conservation of Tissue and Function in Pulmonary Resection

The Technique of the Anatomical Separation of Segments

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SUMMARY

Total ablation of an entire limb to remove a small benign granuloma or tumor is unthinkable. Yet when an entire pulmonary lobe is removed for a similar lesion the sacrifice of normal tissue and function is taken for granted. Operations upon the lung commenced with pneumonectomy, were made more selective by lobectomy, and now can be confined to resection of single pulmonary segments when the diseased area is no more extensive, or to single segments in several lobes if necessary.

Technically the pulmonary segment is the unit of pulmonary resection. The separation of one from another, or even a half of one from the other half, can be accomplished with anatomical accuracy. More widespread use of this operation will provide surgical aid to many bronchiectatic patients who otherwise are afflicted with disease too widespread for cure. It will conserve healthy lung tissue in benign conditions where removal of the diseased area is necessary.

The technical steps of pulmonary segmental resection are outlined and illustrated.

WHY do general practitioners and internists not refer patients with a single round or wedge-shaped mass in the lung for operation? Why do thoracic surgeons remove so much good lung in excising small benign pulmonary lesions? These questions are connected.

When a physician observes a patient with a benign tumor of the hand or arm, or a localized granuloma, or a crippling scar he does not watch the lesion by physical examination and repeated x-ray study for many months. He arranges for surgical removal. If he finds a mass in a woman's breast he doesn't, nowadays, pursue a course of watchful waiting or dismiss the finding as of academic interest only. He insists on immediate surgical removal for a positive early diagnosis and an optimal opportunity for cure if malignant change is present. A localized pulmonary mass, round or wedge-shaped on x-ray examination, cannot be palpated, trans-illuminated, tested for tenderness and so on as can a mass in the breast. With so little information to go on, why should a physician procrastinate and not have biopsy performed early? The principal deterrent is, probably, his consideration of both the risk of pulmonary resection and the extent of resection practised even when the lesion is benign. The risk, once great, is no longer significant in comparison with the potential danger of the lesion itself. The extent of resection, at first total pneumonectomy and later lobectomy, can now be limited to the pulmonary unit or units involved,[5, 7, 8, 9, 10] except when malignant change is present. When physicians recognize these facts they will react to a pulmonary mass as to a tumor of the breast.

Thoracic surgeons should conserve the maximum of normally functioning pulmonary tissue. That not all of them do is owing to a paradox of pulmonary resection. Here, unlike excisional operations upon the brain, limbs, intestine and so on, but perhaps akin to renal operations, it is technically easier to remove an entire lung than a lobe, or a lobe than a segment. Thus it used to be that if surgical removal was to be done, total pneumonectomy was necessary. When lobectomy was mastered, that was the most conservative and function-preserving operation that could be offered. Thoracic surgeons are now in the process of changing to the segment as the unit of pulmonary resection.[2, 3, 5, 6, 7, 8, 9, 10]

Pulmonary segmental resection is valuable not alone for biopsy of a localized mass or for removal of a localized benign process; indeed, perhaps the greatest usefulness of the procedure is in dealing with bronchiectasis.[2, 6, 7, 8, 9] This disease, commonly misdiagnosed as chronic bronchitis, or asthma, is a disease of lung segments. Usually it affects *some* segments of *several* lobes. The only cure for the condition is surgical removal of the diseased areas, but unless a more selective operation than lobectomy is employed, only a small proportion of persons who have the disease can be so treated, for in most cases too many lobes contain involved segments. If only the diseased segments of lobes are removed and the normal tissue of each affected lobe is preserved it is possible to completely remove the bronchiectatic segments in most cases. (See Figure 1.) In typical severe cases, the lingula, the middle lobe, and both lower lobes are involved, but the superior segments of the lower lobes, comprising by volume about three-sevenths of the two lobes, are normal. Each such superior segment is roughly equivalent in size to a middle lobe or to both segments of a lingula. Preservation of these superior segments, which is standard in seg-

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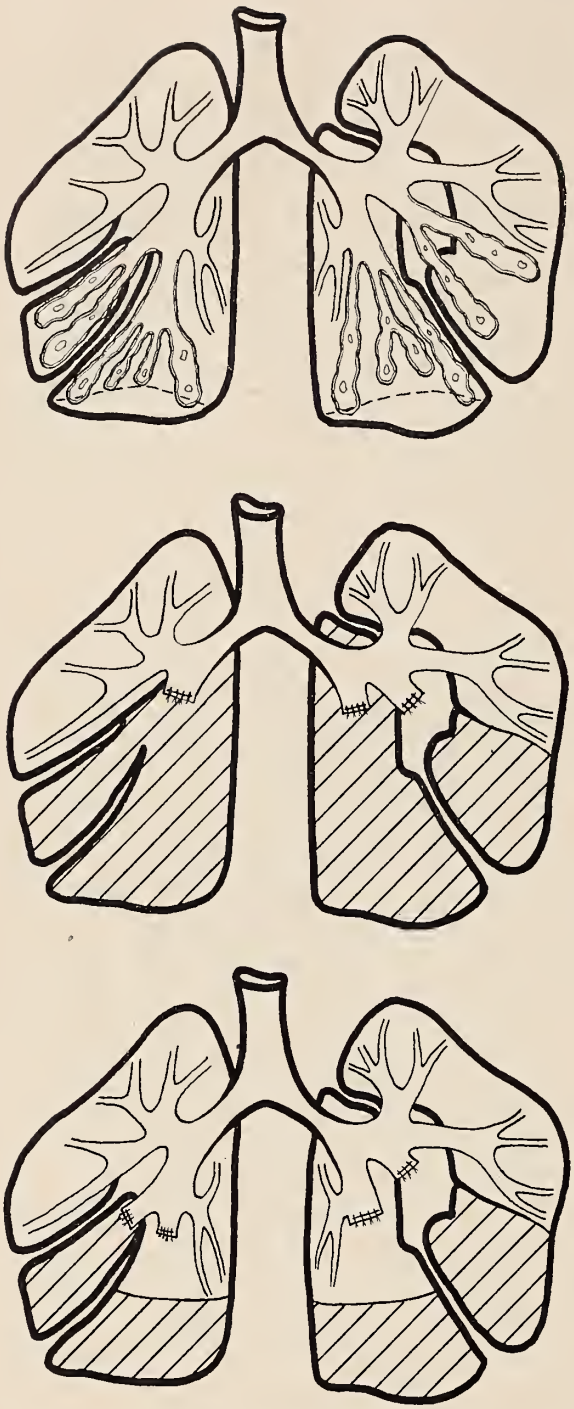

Figure 1.—*Upper*—The common distribution in bilateral bronchiectasis. Note that both lower lobes are involved but the superior segment of each, totaling about three-sevenths by volume, is not involved. The middle lobe and lingula segments are involved. *Middle*—Excision of the involved segments by lobectomy and lingulectomy results in extensive loss of lung tissue, including the normal superior segments of both lower lobes which together aggregate as much tissue as the middle lobe and lingula combined. This excision leaves only six pulmonary segments (equivalent of two right upper lobes) for function. *Lower*—Excision of the diseased segments only preserves the superior segments of the lower lobes and thus leaves the equivalent of two right upper lobes, a middle lobe and a lingula for function.

mental excision,[7, 8, 9] permits removal of both the middle lobe and the lingula with a total tissue loss equivalent to two lower lobes—yet diseased segments have been removed from four lobes. For bronchiectasis of minimal extent but with definite symptoms present, it is no longer necessary to remove half of a lung when only one, or two, segments of one lobe are involved. (See Figure 2.) The preservation of all normal lung tissue is of great value in the patients, most of them young, both for immediate maximum function and for protection from pulmonary insufficiency in case of future pneumonia, emphysema, asthma, bronchogenic carcinoma or cardiac disease.

A field of promise for segmental resection is pulmonary tuberculosis. Here there is often a localized problem, such as a thick-walled cavity or thin-walled tension cavity, which defies more routine therapeutic measures. Often there is sufficient disease of non-cavitary or minimal cavitary nature in the same or opposite lung that thoracoplasty or lobectomy is impracticable. Removal of the one or two segments containing the major lesion will sometimes preserve enough function so that other measures, not otherwise possible, can be utilized to control the remaining disease. In time, segmental resection of localized cavities may become the treatment of choice, since the two methods now commonly used—collapse of a lobe or removal of a lobe—result in extensive loss of function. Such a development will be greatly forwarded by discovery of an antibiotic even more effective than is streptomycin.

ANATOMY

Both physiologically and technically the separation of one part of a lobe from the remainder is dependent upon anatomic factors.[1, 2, 3, 9] These are: (1) the fundamental unit of gross pulmonary structure, and (2) the peripheral nature of the venous drainage of such units.

The fundamental unit is considered to be a conical structure of pulmonary parenchyma which has a central bronchus and artery of supply and a network of veins, arranged peripherally and converging at the apex of the cone where the bronchus and artery enter.[1, 9] The actual size of this fundamental unit has not been determined (so far as is known to the author), but all bronchovascular segments contain at least two and many at least four. A quarter of a single segment is probably the smallest portion of lung that it is practical to remove for excision of a diseased process, and further divisions down the scale need concern us, surgically, no further. Whether or not the fundamental unit has a central vein is not known, but it is not unlikely.

Two or more fundamental units are always combined to form larger units. When they do so the peripheral veins at the points of contact mark the borderline between individual units; therefore they can be called inter-unitary veins. Theoretically, then, regardless of the size, any unit can be separated from its neighbor by locating the inter-

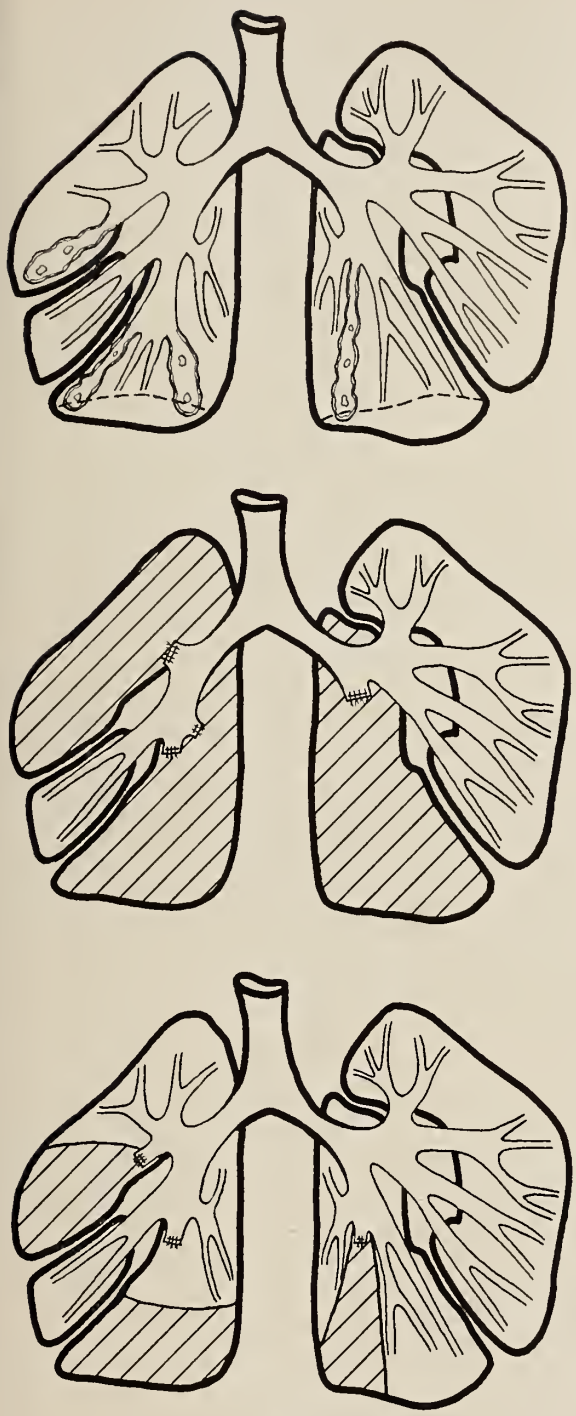

Figure 2. — Illustrating the extreme waste of normal functioning lung that can occur if lobectomy is used rather than segmental excision. Bronchiectasis is a disease of some segments in various lobes. *Upper*—Scattered bronchiectasis, involving four segments in three lobes. *Middle*—Excision of the diseased areas by lobectomy involves the removal of three entire lobes, leaving only a complete left upper lobe and a middle lobe for function. *Lower*—Excision of the diseased areas by segmental resection, preserving nearly all the normal lung. Note: It is quite feasible to remove only the two diseased basal segments of the right lower lobe, but here the remaining two might become rotated or displaced with resulting bronchial obstruction and disease so that often if two basal segments are diseased all are removed. In some circumstances the surgeon might elect to preserve all the normal segments.

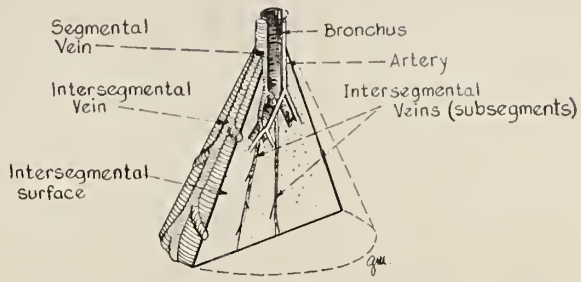

Figure 3. — A bronchovascular segment, in this case formed from four "units." The segmental bronchus and artery enter at the apex of the segmental cone. Their branches enter the apices of the component "units." The principal venous drainage is peripheral with several trunks converging at the apex. These trunks run in the plane between this and any adjacent segment and therefore are called intersegmental veins. They can be located at the segmental hilum and followed peripherally as guides to the cleavage plane between adjacent segments. A smaller vein can be seen adjoining the central bronchus and artery at the apex; it is called the segmental vein. If traced into the segment its branches can be seen to come from the junction surfaces of the component units. The branches are therefore inter-unitary veins. (Modified from Figure 2, Reference Number 9.)

unitary vein and following it and its branches in the plane of separation.

When two fundamental units are thus combined, there is formed a structure with (1) peripheral veins on the noncontact surfaces converging on the common hilum, (2) one or more veins running between the formative units at the plane of contact (inter-unitary veins), (3) a junction of the peripheral veins and the inter-unitary veins at the hilum to form a common trunk, (4) a bronchus of supply for each unit at the hilum combining to form a single bronchus, and (5) an artery of supply for each unit combining to form a single artery. Thus the combination unit has a central artery and bronchus and peripheral and inter-unitary veins.

When more than two units unite, the same principle is found. Two or more groups of fundamental units may combine to form segments or lobes of any size. A group of any size will have a single bronchus, an artery, and two types of veins—peripheral veins, marking the group off from adjacent groups, and central veins constituting one or more inter-unitary veins. The central vein will often be found with the group bronchus and artery.

The largest components of any lobe are the bronchovascular segments. These have been named and the bronchus of supply is of the third order, after the main stem bronchus and the lobar bronchus. This is the lobar subdivision which is generally referred to by the term "segment" (Figure 3). Like any smaller group of lung units, it has centrally a (segmental) bronchus, (segmental) artery, often a (segmental) vein and peripheral veins converging on the hilum. Some peripheral veins mark the plane of separation from a contiguous segment and are known as intersegmental veins: the remaining are covered by pleura and are called subpleural.

Vein Classification:

Central — a. — The segmental vein[9] originating from inter-unitary veins of smaller units or groups

(subsegments). It accompanies the central artery and bronchus.

Peripheral—a.—The intersegmental vein[1,9] which runs peripherally in the plane of junction with adjoining segments.

b.—The subpleural vein which runs peripherally on a free surface and is covered with pleura.

A subsegment is a smaller portion of a segment and may be of various orders of segmental division. All subsegments have the unitary structure described above.

SURGICAL SEPARATION

Surgical separation of a segment (or subsegment) consists essentially of division of the central structures (segmental bronchus, segmental artery and segmental vein, if present), any subpleural veins, and then the separation from contiguous segments (or subsegments) by locating the intersegmental vein (or veins) at the segmental hilum and following it and its branches along the plane of fusion, dividing the small venous tributaries as they are encountered. This having been accomplished to the pleural surface, the segmental resection has been completed. Occasionally circumstances will be found which will make preferable a variation in the order of the steps outlined.

In performing the procedure outlined in the preceding paragraphs, certain natural aids are employed. The diseased segment is usually apparent by inspection or palpation; occasionally bronchographic evidence only is of assistance. Since the segmental bronchus contains cartilage it can be palpated with ease and followed by touch into the segment until there is no doubt that it supplies the diseased segment. This having been carefully done the bronchus is dissected, clamped distally, sectioned near its origin, and the proximal stump sutured closed. The segmental artery accompanies the bronchus and is therefore exposed during the dissection of the bronchus. It is doubly ligated and divided when encountered. Any subpleural veins and/or segmental veins which are present are doubly ligated and divided as they become evident. The segment is then detached from the adjacent lung parenchyma by using the intersegmental vein as a guide to the plane of separation.

How is the intersegmental vein, of a given plane, recognized? The answer is: By anatomical details. Dissection must be at the hilum of the segment being removed; otherwise the incorrect bronchus, artery and veins will be found—structures belonging to segments or subsegments of a higher or lower order. Commencing with the correct bronchus will make evident the hilum of the diseased segment. At this hilum, as was pointed out in the anatomical discussion, there may be found one or more segmental veins, or subpleural veins, or intersegmental veins. Any vein discovered by gentle dissection at the segmental hilum should be followed distally for a short distance. If it follows the segmental bronchus and artery closely into the center of the segment, it is a segmental vein; if it does not, but runs subpleurally, it is a subpleural vein. If it does not follow either of those courses nor any other bronchus or artery, but passes into the parenchyma at the approximate junction of neighboring segments, it is the intersegmental vein.

The intersegmental vein is then followed peripherally between the segments. In most instances the intersegmental vein arises equally from adjacent segments and should be preserved by dissecting between the vein and the diseased segment. Following the vein is facilitated by flattening out the intersegmental plane by the use of mild positive intrabronchial pressure—the anesthetist does this—and applying lateral divergent pressure on the margins of the plane. Care must be taken not to put too much traction on the diseased segment, lest the veins be rendered bloodless and difficult to follow. Separation of the surfaces should be by gentle pressure with the fingertip or the blunt end of scissors. Small venous tributaries and any fibrous strands should be divided with scissors as encountered, since undue traction on them is transmitted to the adjacent healthy segment with resultant trauma and leakage of air.

After the segmental separation has been completed, the pleura is divided and the segment discarded. Usually there are a few small venous branches that must be ligated and several places that leak air. Small air leaks can be disregarded, but vigorous ones usually come from tears in small bronchi with cartilage in the walls. These may persist as fistulas unless ligated closed. Nothing further then remains to be done to the intersegmental surface, except that in tuberculosis it may be advisable to cover the exposed surface with free pleura.

The after-care of patients does not differ from that following lobectomy.

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REFERENCES

1. Boyden, E. A.: The intrahilar and related segmental anatomy of the lung, Surgery, 18:706, Dec. 1945.

2. Churchill, E. D., and Belsey, R.: Segmental pneumonectomy in bronchiectasis, Ann. Surg., 109:481, April 1939.

3. Clagett, O. T.: A technique of segmental pulmonary resection with particular reference to lingulectomy, J. Thoracic Surgery, 15:227, Aug. 1946.

4. Kent, E. M., and Blades, B.: The anatomic approach to pulmonary resection, Ann. Surg., 116:782, Nov. 1942.

5. Overholt, R. H., Woods, F. M., and Betts, R. H.: An improved method of resection of pulmonary segments, J. Thoracic Surgery, 17:464, Aug. 1948.

6. Overholt, R. H., Betts, R. H., and Woods, F. M.: Multiple segmental resection in the treatment of bronchiectasis, Dis. Chest, 13:583, Nov.-Dec. 1947.

7. Overholt, R. H., and Langer, L.: The Technique of Pulmonary Resection, Springfield, Ill., 1949, Charles C. Thomas, Publisher.

8. Overholt, R. H., Woods, F. M., and Ramsay, B. H.: Segmental pulmonary resection, J. Thoracic Surgery, 19: 207, Feb. 1950.

9. Ramsay, B. H.: The anatomical guide to the intersegmental plane, Surgery, 25:533, April 1949.

10. Ramsay, B. H.: Pulmonary segmental resection of solitary lesions of doubtful character, Cal. Medicine, 74:14, Jan. 1951.

The Early Diagnosis of Carcinoma of the Stomach

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SUMMARY

The insidious nature of carcinoma of the stomach has induced a pessimistic attitude in the medical profession, for by the time the unmistakable signs of malignant disease become evident, the patient is doomed. Improvement in results of the surgical treatment of gastric carcinoma will come only with early diagnosis, which is in turn dependent upon appreciation of the gravity of recognizable epigastric distress and the application of the available diagnostic procedures to aid in the diagnosis of malignant lesions in the early, preinvasive stages.

Recognition of the significant risk of malignant change in gastric ulcers is essential, for a high degree of suspicion in the presence of the symptoms of ulcer can lead to diagnosis of malignant lesions at a stage when resection can cure.

THE intellectual effort applied to the fundamental problems of gastric surgery has produced favorable results during the past decade. But the brilliance of these achievements is dulled by the realization that there has been no notable increase in the number of cases in which gastric carcinoma is operated upon in an early stage, and no significant increase in the number of patients who have survived for a five-year period after surgical treatment for carcinoma of the stomach. The obscurity of its symptoms and the limitations of present diagnostic methods make carcinoma of the stomach one of the most depressing phases of the whole problem of cancer. It must be acknowledged, however, that many early lesions remain undetected from lack of effort and attention directed toward their discovery and recognition.

A significant improvement in the operative mortality rates for gastric cancer has been observed at the University of California Hospital. Upon analysis of the case histories of 540 patients operated upon in an 18-year period, it was noted that during the last five years of the 18-year span the mortality rate was 11.9 per cent as compared with 22.2 per cent during the earlier years.[1] At the same time, it is readily apparent that the patients who survived five years or more (19.2 per cent) were the patients who had had lesions that were located in a "favorable" position in the stomach—that is, in the pyloric portion. Tumors arising in this area cause symptoms at a relatively early stage in their development, mainly by obstruction to the flow of gastric contents. Lesions located elsewhere in the stomach may be practically symptomless well into the advanced stages (Figure 1). As the outcome of surgical treatment depends upon the presence or absence of metastases, the problem resolves itself into one of detecting the tumor in the initial stage of development.

Since the present diagnostic methods are limited in scope and frequently permit only incomplete conclusions, it is mandatory that physicians recognize the symptoms that warn of early carcinoma. No typical pattern is discernible in the recorded symptomatology which covers a multitude of complaints, including various degrees and descriptions of indigestion, dyspepsia, epigastric distress, anorexia, gaseous eructation, heartburn, easy fatigue, dysphagia, nausea, vomiting, hematemesis, malaise and loss of weight. Obviously, no one of the various symptoms is a specific one for carcinoma of the stomach. As Moynihan[2] so aptly said, "One wonders whether all the patients exhibiting such a confusing array of symptoms could possibly have the same disease."

Unfortunately, most of the symptoms caused by carcinoma of the stomach can be classed as simple dyspepsia; but therein lies the entire story of the early diagnosis of gastric cancer. The possible gravity of mild degrees of epigastric distress cannot be too strongly emphasized.

Figure 1.—*A*—As the prepyloric region is narrow, malignant lesions there can be recognized early by the obstructive symptoms produced. *B*—The spacious lumen of the stomach elsewhere can accommodate far advanced carcinoma without producing definitely recognizable symptoms.

From the Division of Surgery, University of California School of Medicine, San Francisco.

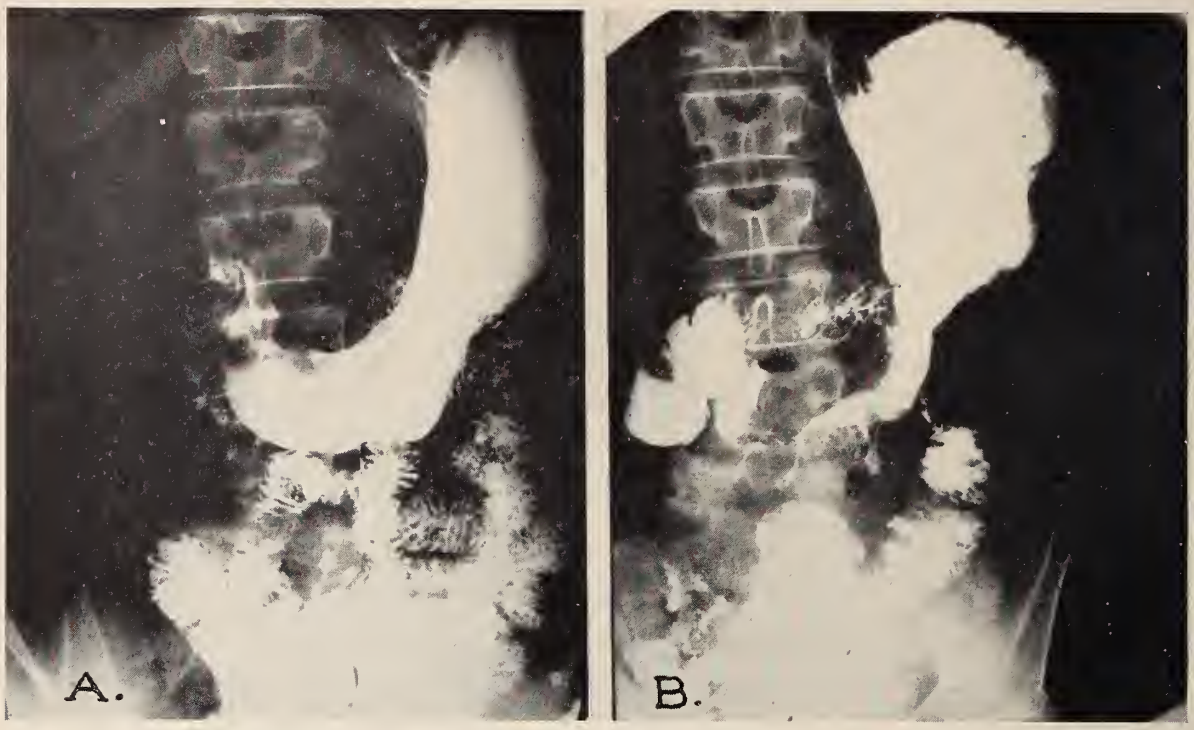

Figure 2.—*A*—Peristaltic action appeared normal through the suspicious area on the greater curvature. *B*—Two years later, after constant gastric distress, the diagnosis was obvious but too late.

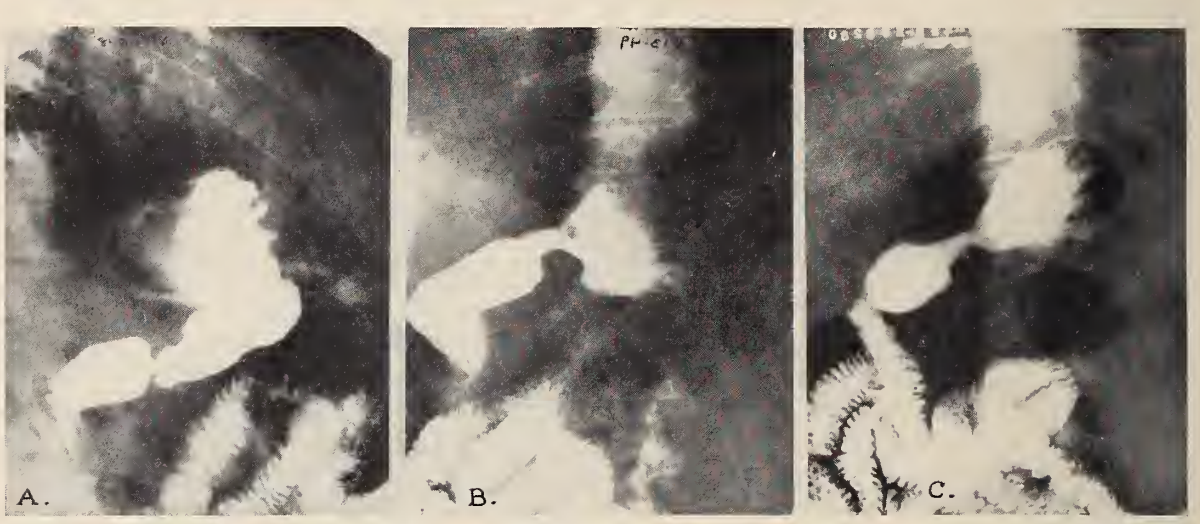

Figure 3.—*A*—The original roentgen film was interpreted as within normal limits. In spite of continued epigastric distress, five months elapsed before a second barium study, *B*, was performed. One month later, *C*, exploratory laparotomy was recommended.

Oftentimes the patient becomes aware of gastric discomfort only after it has recurred with increasing frequency and intensity. Hence, the greater the sensitivity of the patient to his own distress, the greater will be the opportunity for the detection of gastric carcinoma while it is still confined to the site of origin. Symptoms that are sufficient to cause the patient to consult a physician must be regarded with alarm. It is a physician's responsibility when confronted with mild degrees of gastric discomfort to suspect carcinoma and make a diligent effort to detect it. Even without definite proof of malignant disease, continuing symptoms constitute highly suspicious danger signals. The number of cases in which carcinoma of the stomach metastasizes and therefore becomes incurable while the patient is receiving symptomatic treatment is probably more than even the highest estimate would indicate.

The current effort on the part of investigators to discover some new technical device for the detection of gastric carcinoma is commendable and necessary, for the search must be a never-ending one. Practicing physicians, however, must assume

the responsibility of establishing an early diagnosis by utilizing methods currently available. It must be recognized that the diagnostic procedures now in use are adequate for the diagnosis of carcinoma of the stomach for very many more patients than those to whom they are applied.

Roentgen study of the stomach suffices in at least 95 per cent of cases to provide a diagnosis of carcinoma of the stomach. However, this high percentage is merely evidence of the advanced state that the lesion has reached before precise methods of diagnosis are instituted. Suspicious symptoms call for immediate evaluation by x-ray and, especially when they persist, for careful follow-up. A patient observed by the authors, a man aged 42, had vague epigastric distress for two months. Roentgen studies of the stomach were reported as nonconclusive with respect to organic disease. Even though symptoms continued, the patient thought it unnecessary to return because of the original roentgen report. When operation finally was performed two years later, complete excision of the tumor could be accomplished only by total gastric resection (Figure 2). Another patient, a man aged 56, with a positive serologic test for syphilis, was treated symptomatically for six months because the original roentgen film was reported as showing no organic disease. In spite of continued symptoms a relatively high grade gastric obstruction developed by the time operation was recommended (Figure 3).

A patient with suspicious symptoms must not be lulled into a sense of security by a negative report after a single x-ray examination. The radiologist is not responsible for the management of such patients; it is the clinician who must be constantly aware of the malignant potential of continuing or recurrent symptoms referable to the stomach. The absolute necessity of repeated roentgen examinations in such circumstances cannot be stressed too strongly.

Periodic roentgen examinations are advisable for patients who have pernicious anemia, since certain changes in the gastric mucosa associated with that disease apparently predispose to the development of carcinoma. Rigler,[3] who examined a large series of patients roentgenologically at intervals of six months, noted gastric cancer in 18 and polyps in the stomach in 17 of 259 patients with pernicious anemia studied. Patients who have histamine-proved gastric anacidity should probably undergo similar studies since a significant number of them have atrophic gastric mucosa which seems to bear some relationship to the development of cancer of the stomach.

In the event of equivocal or even negative roentgenologic findings, in the presence of continued symptoms, direct inspection of the stomach by gastroscopy may provide evidence not obtained by any other method. However, as with all laboratory procedures, the value of gastroscopy is in direct proportion to the skill and experience of the examiner. The evidence thus obtained is not absolutely dependable when taken alone, but positive findings, when added to doubtful radiographic evidence, are of great value (Figure 4).

Figure 4.—The small malignant ulcer is evident on gastroscopic study. *Left*—Note the rolled, raised margins and the partially necrotic ulcer base. *Right*—A prepyloric polypoid malignant mass encroaches upon the pyloric canal as seen through the gastroscope.

In recent years, the cytological examination of gastric contents has emerged as a provocative innovation in the never-ending search for a means of obtaining an early diagnosis of carcinoma of the stomach. More and more patients are being investigated by this technique, but it is generally acknowledged that 60 per cent is the maximum of diagnostic accuracy obtainable up to the present.[4] Until greater accuracy can be achieved, this procedure cannot be relied on to solve the urgent problem of the early diagnosis of gastric cancer.

A challenge to medicine is the malignant gastric lesion that heralds its presence early by causing symptoms typical of an ulcer, for here lies hope of detecting carcinoma at a curable stage. The reported incidence of malignant change in gastric ulcers varies considerably, but most observers agree that carcinomatous changes may occur. An opposing opinion suggests that both the ulcer-like symptoms and the pathologic features are attributable to ulceration at the site of a primary carcinoma of the stomach. In any event, the etiologic sequence is of little moment beside the fact that in many instances a readily resectable malignant lesion is permitted to reach a most unfavorable state while prolonged injudicious conservative therapy is carried out. A man 45 years of age who was observed by the authors had symptoms of gastric ulcer for seven years. In roentgen films taken in 1941 a suspicious area in the pyloric antrum was noted. Thereafter the patient was under continuous medical observation elsewhere, with repeated x-ray examinations, for five years. Between October 1941 and March 1946, no fewer than ten roentgen studies of the stomach, each demonstrating a persistent lesion in the pyloric antrum, were performed before the probability of malignant disease was considered (Figure 5). The likelihood of malignant change in any case of gastric ulcer cannot be too strongly emphasized.

It is sometimes said that the risk of an operative procedure for a gastric ulcer is greater than the possibility of the lesion's being malignant. This fortunately is untrue. In most recent published reports the mortality rates are in the neighborhood of 5 per cent or less. In a group of 99 patients of all age groups who underwent subtotal gastrectomy for

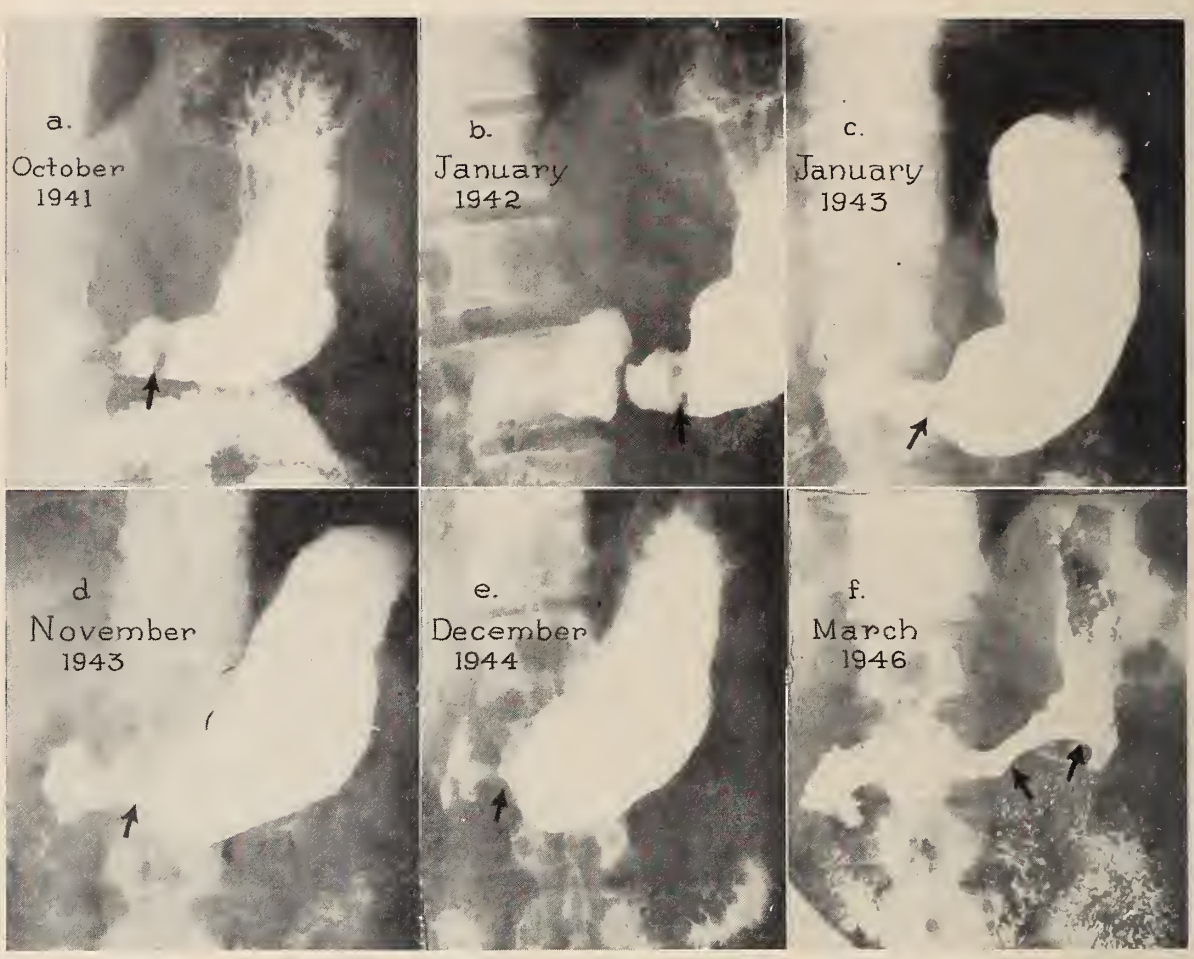

Figure 5.—Roentgenograms of a patient who had symptoms of gastric ulcer for a period of seven years. Despite the presence of a persistent prepyloric lesion, conservative therapy was continued for five years before operation was considered. A resectable lesion was permitted to reach a most unfavorable stage.

benign gastric ulcer at the University of California Hospital, there were but five deaths, a mortality figure just over 5 per cent.[5] In 24 cases of malignant gastric ulcer there was but one death, comprising a combined mortality rate of 4.8 per cent. It is important to contrast these figures with the generally acknowledged fact that from 10 to 20 per cent of ulcers of the stomach are malignant rather than benign.

Some of the factors which point toward possible malignancy in a gastric ulcer are the absence of free gastric acid, short duration of symptoms, an ulcer crater greater than 2.5 cm. in diameter and one located in the prepyloric region, along the greater curvature or high on the posterior wall of the stomach. None of these criteria can be considered specific, however, and their reliability for differential diagnosis in an individual patient must be questioned. If the several investigative procedures yield equivocal results in the examination of a patient with a gastric ulcer, operation should be done immediately, for in such circumstances the patient should not be denied the certainty of diagnosis that can be obtained thereby.

Concern for the patient with mild symptoms, assiduous application of diagnostic procedures and the discovery of carcinoma at an early stage are only part of a physician's responsibility. He must, in addition, be alert to the fact that mere suspicion of gastric carcinoma constitutes an indication for prompt surgical intervention. Cancer of the stomach often defies detection by any means except direct inspection at operation or microscopic examination. To await exact clinical signs is to invite disaster. Suspicious symptoms, especially if they persist, are adequate justification for exploratory laparotomy or for excision of a recalcitrant gastric ulcer.

REFERENCES

1. Bell, H. G.: Problem of gastric cancer in a university hospital, Surgery, 23:351-353, March 1948.

2. Moynihan, B.: Abdominal Operations, 21st ed., Philadelphia, W. B. Saunders Co., Vol. 1, 1926.

3. Rigler, L. G., and Kaplan, H. S.: Pernicious anemia and tumors of the stomach, J. Nat. Cancer Inst., 7:327-332, April 1947.

4. Seyboldt, J. F., Papanicolaou, G. N., and Cooper, W. A.: Cytology in diagnosis of gastric cancer, Cancer, 4:286, March 1951.

5. Grimes, O. F., and Bell, H. G.: Clinical and pathological studies of benign and malignant gastric ulcers, Surg., Gynec., & Obst., 90:359-371, March 1950.

Observations on Aortic Embolism

With Report of Thirteen Additional Cases

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SUMMARY

Complete obstruction of the circulation to the lower extremities by lodgement of an embolus at the bifurcation of the aorta requires early surgical intervention if life is to be preserved and function retained.

A summary of thirteen cases of aortic embolism is presented, including three apparently new etiologic factors. The literature is reviewed, and current cases compared with previously reported cases. A detailed report of aortic saddle embolus arising from auricular fibrillation in the absence of organic heart disease, and with complete return to health and heavy work, is reported.

RAPID advance has been made in the past two decades in the surgical treatment of arterial embolism, a condition first recognized by Virchow[12] in 1845. The first successful embolectomy, for femoral embolism, was reported by Labey[7] in 1911, and the treatment of arterial emboli is now commonplace. There is still some disagreement as to what levels of embolism should be operated upon, but it is rather generally accepted that complete occlusion of the aorta and common iliac arteries by emboli must be surgically relieved if there is reasonable expectation that the patient can tolerate the procedure.

MATERIAL

The present study is of 13 cases of aortic saddle embolus, 12 in patients observed in the past 15 years at Los Angeles County Hospital, and one in a patient treated in private practice.

These cases, added to 193 noted by Albright and Leonard[1] in a review of the literature in 1950 and three others subsequently reported by Burgess and Hartwell,[3] Wilson[14] and Massell,[9] bring the total reported number to date to 209. One hundred fifty-four of the patients died, and of the 55 who survived 31 were treated by aortic embolectomy—direct aortotomy in 13 cases and indirect in the other 18 (see Table 1).

In the present series one of the three patients who survived was treated conservatively and had much residual functional impairment. The other two were treated by direct aortotomy. One returned to normal activities after multiple embolectomies and bilateral amputation, and one (the case is reported in full herein) returned to work as a carpenter.

The longest interval between onset of embolism and beginning of treatment was 48 hours, the shortest two hours, and the average 12.9 hours. Five of the 13 patients, moribund when first observed, died within 24 hours. Of the remaining eight, four were treated by direct aortotomy, one by indirect embolectomy, and three conservatively. Two of the four patients subjected to direct aortotomy died and two recovered. The patient on whom indirect embolectomy was done died 35 days after operation. Of the three treated non-surgically, two died within eight days and one survived with total disability. Contributory causes of death in addition to aortic embolism are listed in Table 2.

ETIOLOGICAL FACTORS

Three associated etiological factors not previously described were noted in the present series:

1. *Trichinosis of the myocardium.* Multiple emboli developed in one patient during stormy convalescence from trichinosis. Embolectomy of both iliac arteries and one femoral artery was partially successful. At autopsy, the source of emboli was noted to be left ventricular mural thrombi apparently due to trichinosis of the adjacent myocardium.

2. *Syphilitic aortic plaques.* Large aortic mural thrombi caused by syphilitic plaques were the source of emboli in one case.

3. *Auricular fibrillation in the absence of organic heart disease.* The patient in whom this phenomenon was noted was completely restored to health by surgical treatment (see case report). As auricular fibrillation without organic cardiac disease has been frequently noted (Phillips and Levine[11]), it is felt that perhaps in cases of embolism on this basis the prognosis may be considered favorable, in view of the outcome in the present instance.

As to other, previously described, associated factors, they were noted in this series in the incidence indicated in Table 3.

DIAGNOSIS

The clinical and differential diagnosis of emboli of the aortic bifurcation is not difficult if the criteria,[9, 10, 13] are kept in mind: cold, pallor, pulselessness, pain, paresthesia and paresis, involving the lower extremities more or less symmetrically. Usually, if occlusion is complete, there will be little or no pulsation from the inguinal ligament down; pallor and temperature change will be manifest in the middle one-third of each thigh; paresthesia

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TABLE 1.—*Reports of Cases of Aortic Embolism at Bifurcation*

Source	Number	Deaths	Recovered Patients: Amputations	Conservative treatment	Surgical: Direct	Surgical: Indirect
Albright & Leonard review of literature	193	144	11	8	8	18
Burgess & Hartwell	1	....	....	....	1	....
Wilson	1	....	....	....	1	....
Massell	1	....	1	....	1	....
Present Study	13	10	1	1	2	....
	209	154	13	9	13	18

and paresis will be proportional to the degree of ischemia in various nerves and muscle groups.

An oscillometer or an aneroid sphygmomanometer is of great value in the observation of these criteria.

TREATMENT

If there is doubt about the diagnosis, or about the patient's ability to survive operation, conservative treatment, about which much has been written, [2, 5, 6, 9] must be carried on until these doubts are cleared. If occlusion and arteriospasm, which may extend progressively into the collateral vessels, have not been present over four to five hours, surely time will be well spent for spinal or sympathetic block to determine whether the cold level and pulse will not progress further into the extremities.

As to technical aspects, the operation can be performed in any hospital with adequate facilities for average laparotomy. Arterial silk or nylon, 5-0 or 6-0, swaged on fine needles, and a few lengths of soft rubber tubing are necessary. Expert anesthesia is of paramount importance. The choice of transabdominal or retroperitoneal exposure rests with the surgeon. Retroperitoneal exposure provides adequate working room and accessibility to one sympathetic chain, with minimal postoperative ileus. It is not necessary to completely mobilize the vessels in order to pull the tourniquets into place with blunt-nosed, right-angled clamps. Postoperative treatment consists of all proven measures of effective arterial spasmolysis and anticoagulant therapy, plus supportive treatment as indicated, especially for the heart. The extremities should be neither raised nor lowered, and should be kept cool but not cold. Progress is determined by skin color and temperature, return of function, and especially by frequent oscillometric determinations.

It is felt that the results in the series here reported are at least comparable to those in previously published reports, particularly in view of the fact that each case was managed by a different surgeon and most of the patients appeared to be moribund when first observed.

Prophylaxis of arterial emboli has now reached a significant phase. Anticoagulants are more frequently being used in various cardiac conditions; and one of the most recent measures is resection or ligation of the left auricular appendage to prevent recurrence, as suggested by Dock and practiced by Madden[8] and Baranefsky.[3] Although the latter measure seems rather heroic, it becomes obvious that in at least some cases in which warning had been given by the occurrence of previous minor emboli the patients might have been saved by this prophylactic procedure. In six of the 13 cases in the present series there had been previous emboli.

TABLE 2.—*Causes of Death in Addition to Aortic Embolism (Cardiac Failure Contributory in All Cases)*

	No. of Instances
Cerebral embolus	5
Peritonitis, ruptured appendix	1
Shock	1
Anuria (postoperative) and possibly renal embolism	1
Retrograde propagation of clots	1
Coronary occlusion (repeated)	1
Mesenteric embolism	1

TABLE 3.—*Incidence, in Present Series, of Associated Etiologic Factors Previously Reported by Other Investigators*

	No. of Cases
Auricular fibrillation:	
Rheumatic heart disease	5
Arteriosclerotic heart disease	1
Hypertensive heart disease	1
Thyrotoxicosis with heart disease	0
Coronary occlusion:	
Myocardial infarction with mural thrombus	3
Paradoxical embolus from venous thrombosis and patent foramen ovale	0
Previous arterial embolism	8 times in 6 cases

CASE REPORT

A 40-year-old carpenter was first observed at noon on February 24, 1950, five hours after onset of prostrating pain from the waist down which was not controlled by an opiate. Members of the family said the patient had a quart of whiskey and three packs of cigarettes a day for ten years. He had had an occlusion of the left anterior tibial artery one year before, with minimal sequelae.

On examination, the blood pressure seemed elevated in the arms, and it was undiscernible in the lower extremities. There was pronounced irregularity of pulse, with a pulse deficit of 10. The lower extremities were cold, pale, and cadaverous in appearance. No oscillations were present from the groins down. Aortic pulsations were easily palpable, but there were no pulsations below the umbilicus. Deep reflexes were exaggerated in the upper extremities, absent in the lower. No other abnormalities were observed in physical examination and in laboratory tests, except for a prothrombin concentration of 49 per cent of normal.

Diagnosis of saddle embolism at aortic bifurcation seemed established. Priscoline® and Papaverine® given intravenously had no effect. The sympathetic innervation was blocked by anesthetic administered high in the spine and the patient was prepared for operation.

After anesthesia, there seemed to be faint pulsations in the right common femoral artery. On exploration of the left common femoral artery it was found that there was no blood flow, nor could an embolus be dislodged from above. The wound was closed, and exploration of the aortic bifurcation was immediately begun. Adequate exposure was obtained through a long left transverse incision, with retroperitoneal approach.

Through the spastic walls of the vessels the embolus was palpated in the aorta and extending into both common iliacs. Soft rubber tourniquets were secured above and below the occlusion, with no attempt to mobilize the vessels; a 2 cm. incision was made in the aorta and the left iliac artery, and a gray-brown embolus was removed in two pieces by intraluminal pressure and gentle milking. A good flow of blood came from all arteries but the right common iliac.

The aortic wound was closed, Gelfoam® was applied, and the abdominal wound was closed. Immediately after operation the left foot and leg were red and hot, but the right foot and leg were cold and mottled. Palpation and oscillometric readings confirmed a diagnosis of occlusion of the bifurcation of the right common femoral artery, possibly dislodged during operation.

Sixteen hours later, after right sympathetic block had been carried out twice more, right femoral embolectomy was successfully accomplished, with immediate return of circulation to the right foot.

Convalescence: Circulation was observed clinically and by oscillometer, and sympathetic block was administered every 12 to 18 hours on one side or the other as indicated by the readings. By the fifth day, good bilateral posterior tibial pulses were palpable. Dicoumarol dosage was adjusted to findings on the quick prothrombin concentration test, which reached a level of 14 per cent of normal on the second day, were maintained below 20 per cent until the seventh day, and allowed to rise gradually thereafter. Alcohol in a 5 per cent solution and procaine in a 0.2 per cent solution were each administered intravenously three times in the first 48 hours, but this treatment was abandoned because greater vasodilatation occurred in uninvolved areas than in the lower extremities. However, it was apparently during the first administration of procaine that the cardiac rhythm reverted to normal.

The patient's bed was kept level and the lower extremities were kept cool. The wounds healed by first intention.

After detailed postoperative study, a cardiologist reported no evidence of organic heart disease.

Ambulation was first attempted on the seventh day; the patient was discharged on the thirteenth day and returned to work on the 45th day. Deep desquamation from the knees down occurred three times in the first four weeks. Severe foot pains occurred in the first six weeks but recovery was complete before the patient returned to work.

This case had several unique aspects. General conditions favored a successful outcome much more than in the average case. Despite heavy alcoholic intake, the patient's general health was good. The initial prothrombin concentration was low, and this condition may have prevented the development of long tail-clots so frequently encountered. The patient had no organic heart disease, and he was relatively young. Success in embolectomy may be measured not in terms of prolonged survival of the patient, because in most cases of embolism serious cardiac disease is also present, but rather in terms of preservation of tissue and of function. As far as can be ascertained, this is the thirteenth reported successful case of direct aortotomy for embolectomy of the aortic bifurcation and probably the most satisfactory in the end result, considering that the patient's lower extremities were apparently completely ischemic. It was felt that the secondary (right femoral) embolectomy was justified by the preservation of function and also of tissue.

Although paravertebral nerve block may result in severe hematomata when done in the face of reduced prothrombin concentration, it was felt that the paravertebral blocks were as necessary to recovery from vasospasm as was dicoumarol to the prevention of intravascular coagulation.

CONCLUSION

Occlusion of the terminal aorta by a saddle-riding embolus is a sudden and dangerous condition usually occurring in a patient already seriously ill with cardiac disease. However, it can occur in a person with functional or toxic cardiac arrhythmia whose general health is relatively good. In either event, prompt surgical intervention is indicated to prevent total disability or death. Even if the patient cannot tolerate surgical treatment, every other therapeutic measure of proven value should be attempted.

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REFERENCES

1. Albright, H. L. and Leonard, F. C.: Embolectomy from the abdominal aorta, N.E.J.M., 242:271-277, Feb. 1950.

2. Andrus, W. DeW.: Peripheral arterial embolism with particular reference to an evaluation of conservative treatment, Arch. Surg., 60:511-519, March 1950.

3. Baranefsky, I. D., and Skinner, A.: Ligation of left auricular appendage for recurrent embolization, Surg., 27: 848-852, June 1950.

4. Burgess, C. M., and Hartwell, A. S.: Removal of saddle embolus of aorta, J.A.M.A., 141:387-388, Oct. 1949.

5. Frank, N.: Newer agents in peripheral vascular disease, J. Med. Soc. N.J., 47:9-13, Jan. 1950.

6. Haimovici, H.: Peripheral-arterial embolism, Angiology, 6:20-45, Feb. 1948.

7. Labey, cited by Mosney, M., and Dumont, N. J.: Embolie femorale au cours d'un retrecissement mitral pur, Arteriotomie. Guerison, Bull. Acad. de med., 66:358-361, 1911. Cited by Warren and Linton.[10]

8. Madden, J. L.: Resection of left auricular appendix: prophylaxis for recurrent arterial emboli, J.A.M.A., 140:769-772, 1949.

9. Massell, T. B.: The management of embolism of the arteries of the extremities, Ann. West. Med. & Surg., 3:299, Sept. 1949.

10. Morest and Rubin: Embolism of bifurcation of aorta, Am. Heart. Jr., 36:277, Aug. 1946.

11. Phillips, E., and Levine, S. A.: Auricular fibrillation without other evidence of heart disease, Am. J. of Med., 7:478-489.

12. Virchow, R.: Uber die skute Entzundung der Arterien, Virchows Arch. f. path. Anat., 1:272-378, 1847. Cited by Warren and Linton.[13]

13. Warren, R., and Linton, R. R.: The treatment of arterial embolism, N.E.J.M., 238:421, March 1948.

14. Wilson, H.: Successful removal of saddle embolus by transabdominal route, J.A.M.A., 141:389-390, Oct. 1949.

Treatment of Impetigo with Sulfonamide-Urea Powder

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SUMMARY

Sulfonamides can be used in the treatment of impetigo with vastly increased safety and with more effectiveness in powder rather than ointment form when combined with urea powder in a ratio of approximately three parts of sulfonamide to one of urea.

Of 701 patients treated with such a mixture, 95.6 per cent were cured within a week. The only complication was local dermatitis which occurred in 0.57 per cent of patients. This compares favorably with results obtained with newer and expensive drugs which usually have the disadvantage of being used in a greasy vehicle.

The low incidence of sensitivity reaction to the sulfonamide-urea powder is perhaps ascribable in part to the avoidance of a greasy vehicle.

SULFONAMIDES combined with urea as a powder for topical use against impetigo are highly effective, safe, and simple to use. In addition, they are clean, cheap, and do not have the occlusive, heating, smearing effect of an ointment vehicle. The avoidance of such a vehicle may play some part in reducing the sensitizing tendency of the sulfa drugs.

CRITERIA FOR SATISFACTORY LOCAL APPLICATION

Sulzberger and Baer[12] pointed out that any new topical agent should be evaluated for therapeutic effect, for sensitizing capacity, and with regard to whether it may be used systemically. And, if it may be used systemically, it is important to know whether the sensitizing effect of previous topical use may foreclose use of the drug parenterally or enterally, perhaps as a life-saving measure, in treatment of a general illness. (This consideration may apply to practically all the newer antibiotics also. Yet, although there have been repeated warnings against the indiscriminate local application of sulfa drugs, some investigators who join in these admonitions do not hesitate to recommend the newer drugs for the same purpose, even though the degree to which they cause sensitization has not yet been determined.)

La Londe and Gardner[5] quoted studies in which it was noted that urea renders sulfonamide compounds more soluble and that it also has a solvent action on pus, debris and necrotic tisues which act as sulfonamide inhibitors. It also has the advantage of being relatively non-toxic, mildly bacteriostatic, and inexpensive. Organisms resistant to sulfonamides are no longer so when the drug is combined with urea. Some organisms which are not susceptible to either a sulfa drug or urea alone in vitro are destroyed by the two drugs together.

CLINICAL STUDY

The authors have used 70 per cent sulfathiazole and 30 per cent urea powder routinely in treatment for impetigo since 1943. Patients known to be sensitive to sulfonamides were not treated with this preparation. As sulfathiazole has been deleted from New and Non-Official Remedies,[9] sulfadiazine may be used instead. The former, in combination with urea, is a coarse grainy white powder; the latter mixture is finer.

The records of 1078 patients with impetigo who were treated in the office were reviewed. Seven hundred one patients were treated with the powder, and 670 of them (95.6 per cent) were well within a week. Local dermatitis developed in four patients (0.57 per cent); it cleared promptly when use of the powder was discontinued. Fifty-nine patients were treated with 5 per cent sulfathiazole ointment, of whom 44 (74.6 per cent) were well within a week. Dermatitis developed in three cases (5 per cent). Five per cent ammoniated mercury ointment was used in treatment of 268 patients, of whom 146 (54.4 per cent) were well within a week. Dermatitis developed in three cases (1.1 per cent). Various preparations—sometimes more than one in a single case—were used in treating 50 patients: 3 per cent Vioform® cream, half-strength Quinolor® compound ointment, penicillin ointment, bacitracin ointment, tyrothricin in Intraderm,® aureomycin ointment, or nitrofurazone ointment. None of the preparations was used in a sufficiently large group of patients to permit separate evaluation, but there were treatment failures with all except aureomycin and nitrofurazone, each used in only one case. Unfavorable reactions occurred in two of nine patients treated with penicillin ointment.

REACTIONS

Three of the four patients who had allergic reaction to the urea-sulfathiazole powder had not, so far as they knew, been previously exposed to sulfonamides. Two of them had local erythematous and weeping dermatitis within 48 hours after application of the powder, and the other had local dermatitis and scattered papulovesicles elsewhere over the body on the eleventh day of treatment. The

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patient who had had previous exposure to sulfonamides had used 5 per cent sulfathiazole ointment on one occasion and the urea-sulfathiazole powder on two occasions without trouble. In all four cases, cool wet dressings were applied and the dermatitis cleared within a week.

DISCUSSION

There is now more confusion as to the treatment of impetigo than there was 15 years ago. As recently as 1949, Rothman and Shapiro [11] believed that ammoniated mercury was the most commonly used agent. Miller and co-workers[7] noted that a variety of ointment preparations, bacitracin, sulfonamides, penicillin, dihydrostreptomycin, and nitrofurazone, were rapidly effective, but that sensitization rates varied. They reported that dihydrostreptomycin ointment caused reactions in 3.7 per cent of patients, which was a lower incidence than that associated with penicillin, the sulfonamides and nitrofurazone but significantly higher than that with bacitracin. Sulzberger and Baer[13] observed that aureomycin ointment, which has a relatively low sensitizing index (but higher than that of bacitracin or of the powder discussed herein) is a remarkably effective non-irritating form of therapy for the common varieties of pyoderma.

MacKenna and Cooper-Willis[6] in 1945 compared results of treatment of impetigo with microcrystalline sulfathiazole in 15 per cent suspension, with ordinary sulfathiazole in the same concentration, and with lotio cupro-zincica. The reported results, based on a statistical analysis of 1118 uncomplicated cases of contagious impetigo, suggested that, except for a sensitization rate of 2.5 per cent, treatment with sulfathiazole was superior.

Kile, Welsh and McAfee[4] used neomycin (derived from Streptomyces fradiae) in treating 200 patients, several of whom were known to be sensitive to penicillin, streptomycin, bacitracin and aureomycin applied topically. None of the patients had allergic reaction to the new drug, although several were sensitive to the ointment base.

Bacitracin ointment[1, 2, 3, 8] approximates penicillin, nitrofurazone and the sulfonamide drugs in effectiveness, but 0.5 per cent of patients are sensitive to it—a sensitivity rate approximately the same as that of the 70 per cent sulfathiazole-30 per cent urea powder. In addition, it is inactivated by hydrogen peroxide and potassium permanganate and is unstable in an alkaline medium. In contrast, the powder may be applied without debridement or preliminary wet dressings, although such procedures do not interfere with its effectiveness.

In the series here reported upon, the sulfathiazole-urea powder was the most rapidly effective drug, and the sensitivity rate compared favorably with that of the safest drugs now in use. One reason, perhaps, for the low incidence of reaction was the shortness of the period of treatment. There was only one instance of systemic reaction—toxic absorption dermatitis. There is a theoretical possibility of such a reaction from absorption of an appreciable amount of the drug from large denuded wounds, but in such a case the patient usually has fever or other symptoms of systemic disease, and would be best treated with an antibiotic systemically to prevent a major complication of coccal infection. There is also the remote possibility of bizarre hypersensitivity of the periarteritis nodosa type, as described by Rich,[10] but this remains theoretical with the use of the sulfonamide-urea powder as the authors advocate. A number of patients used the powder many times without having difficulties of any sort.

A minority of the patients in each of the groups treated by the various means received small exposures of superficial fractional x-ray therapy for diseases accompanying the impetigo, such as underlying eczema or dermatitis.

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REFERENCES

1. Blattner, R. J.: Bacitracin in local treatment of pyogenic infections, J. Pediat., 35:790, Dec. 1949.

2. Derzavis, J. L., Rice, J. S., and Leland, L. S.: Topical bacitracin therapy of pyogenic dermatoses, J.A.M.A., 141: 191-192, Sept. 17, 1949.

3. Eichenlaub, F. J., and Olivo, M. A.: Bacitracin therapy in pyogenic infections of the skin, Med. Ann. District Columbia, 18:236, May 1949.

4. Kile, R. L., Welsh, A. L., and McAfee, G. D.: Topical use of neomycin, Arch. Derm. & Syph., 62:911, Dec. 1950.

5. La Londe, A. A., and Gardner, W. J.: Effect of urea on bacterial action of sulfonamide drugs; report of five cases of bacterial meningitis, J.A.M.A., 138:406-408, Oct. 9, 1948.

6. MacKenna, R. M. B.: Modern Trends in Dermatology, p. 338, Paul B. Hoeber, Inc., New York, 1948.

7. Miller, J. L., Slatkin, M. H., Wechsler, H. L., and Johnson, B. A.: Dihydrostreptomycin in topical therapy, Arch. Derm. & Syph., 61:648-661, April 1950.

8. Meleney, F. L., and Johnson, B. A.: Bacitracin, Connecticut State Med. J., 14:305, April 1950.

9. Reports of the Council on Pharmacy and Chemistry: Dangers from the external use of sulfonamides, J.A.M.A., 14:1024-1025, Aug. 4, 1945. (b) Resolutions on uses of sulfonamides, J.A.M.A., 129:1194, Dec. 22, 1945. (c) Ibid: Sulfonamides for local application deleted from N.N.R., J.A.M.A., 135:157-158, Sept. 20, 1947. (d) Sulfathiazole and sulfathiazole sodium omitted from N.N.R.: Combinations of sulfathiazole and sulfathiazole sodium with other agents unacceptable for inclusion in N.N.R., J.A.M.A., 141:264, Sept. 24, 1949.

10. Rich, A. R.: The role of hypersensitivity in periarteritis nodosa, Bull. Johns Hopkins Hospital, 71:123, 1942.

11. Rothman, S., and Shapiro, A. L.: The pharmacodynamics of vehicles and drugs in dermatologic therapy, Med. Clin. N. Amer., 33:263, Jan. 1949.

12. Sulzberger, M. B., and Baer, R. L.: Some advances in dermatologic management, Year Book of Derm. & Syph., pp. 7-59, The Year Book Publishers, Chicago, 1946.

13. Sulzberger, M. B., and Baer, R. L.: Year Book of Derm. & Syph., p. 71, The Year Book Publishers, Chicago, 1951.

Treatment of Nutritional Anemia in Infants

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SUMMARY

While iron deficiency is a common cause of anemia in infants, requiring specific treatment by administration of iron, there are other causes which require treatment equally specific. Anemia due to a nutritional deficiency can be improved only by providing the needed nutriment in sufficient quantity.

Two case reports are presented. One is of megaloblastic anemia in an infant, which was treated with a variety of vitamin preparations before administration of folic acid produced improvement. The other report is of anemia due to iron deficiency treated successfully with ferrous sulfate in a dosage twenty times that previously used prophylactically.

In prescribing an antianemic preparation the physician should assure himself that the dosage is adequate (for example, 0.5 gm. daily of ferrous sulfate for iron deficiency). "Broad-spectrum" preparations may be lacking in specific hematinics while containing a variety of vitamins which have no specific hematologic value.

IRON deficiency is probably the most common cause of anemia encountered in the practice of pediatrics. The etiologic delineation of this condition, the methods of diagnosis, and the means of effectual therapy with iron are well established.[5] It is also well established that anemia due to iron deficiency does not respond to any of the vitamins and other hematinics.[1, 5]

Megaloblastic anemia in infancy was characterized recently by Zuelzer and Ogden, who demonstrated that it responds specifically to folic acid[11] but does not respond to other vitamins and/or iron.

Vitamin B_{12},[6] discovered after Zuelzer and Ogden made their reports, has proved effective in megaloblastic anemia due to various causes,[7, 8,9,10] but it has also been reported that this substance has been tried without response in some cases in infants.[2] May and co-workers reported the effect of vitamin C deficiency in the pathogenesis of megaloblastic anemia experimentally induced in monkeys and noted that vitamin C has an important place in the successful therapy of the disease with vitamin B_{12}.[3]

During the development of these increasingly complex therapeutic discoveries there have appeared a variety of modified drop-form iron preparations, preparations with metallic adjuvants, and "broad-spectrum" hematinics. These are often recommended not only for correction of anemia, irrespective of the cause and nature of the disease, but also for general supplementation of an infant's diet. The purpose of this report is to reemphasize (1) the specific response of anemia when the patient is given adequate amounts of the substance in which he is deficient; (2) the lack of response to a "broad spectrum" of combined vitamins and hematinics in large doses if the required substance is not present in adequate amounts.

Case reports of two infants treated at Los Angeles Children's Hospital will be presented. These cases were selected because therapy prior to observation at the hospital was inadequate and because the lack of response illustrates what difficulties may result when a precise diagnosis is not established or where proprietary modified or nonspecific medications are relied upon.

The development of distinct reticulocytosis between 48 hours and ten days after administration of a hematinic is considered indicative of specific response to therapy. Such a response should be followed by a sustained rise in hemoglobin content of the blood or in the number of erythrocytes or both. Only in Case 2 was it possible to determine the latter development.

The diagnosis of megaloblastic anemia in Case 1 was established by the finding of typical megaloblasts on microscopic examination of stained smears of material aspirated from the bone marrow. In Case 2 the diagnosis of anemia due to iron deficiency was based on the microcytic hypochromic appearance of the erythrocytes and the finding of a very low hemoglobin content in the presence of an almost normal number of erythrocytes.

CASE REPORTS

CASE 1.—An 8½-month-old white female was admitted to Children's Hospital June 18, 1950 with complaint of severe coughing, vomiting, anorexia and diarrhea for the previous ten weeks. The patient had been normally delivered at term and had weighed 6 pounds and 10 ounces at birth. The parents and a 2½-year-old sibling had always been in good health; a grandmother had pernicious anemia.

At four weeks of age, because of hives, a proprietary modified powdered formula was substituted for the previous feeding of evaporated milk. Two weeks later another change was made, to pasteurized goat's milk; no further changes were made before or during hospitalization. Cereals, fruits and vegetables were accepted well from the fourth to the sixth month of life but subsequently refused. Vitamins A, D and C (ascorbic acid, 25 mg. per day) were given from the seventh month to the time of hospitalization. Except for the attack of hives at four weeks of age, the patient appeared to be developing normally to the age of six months, at which time she weighed 13 pounds.

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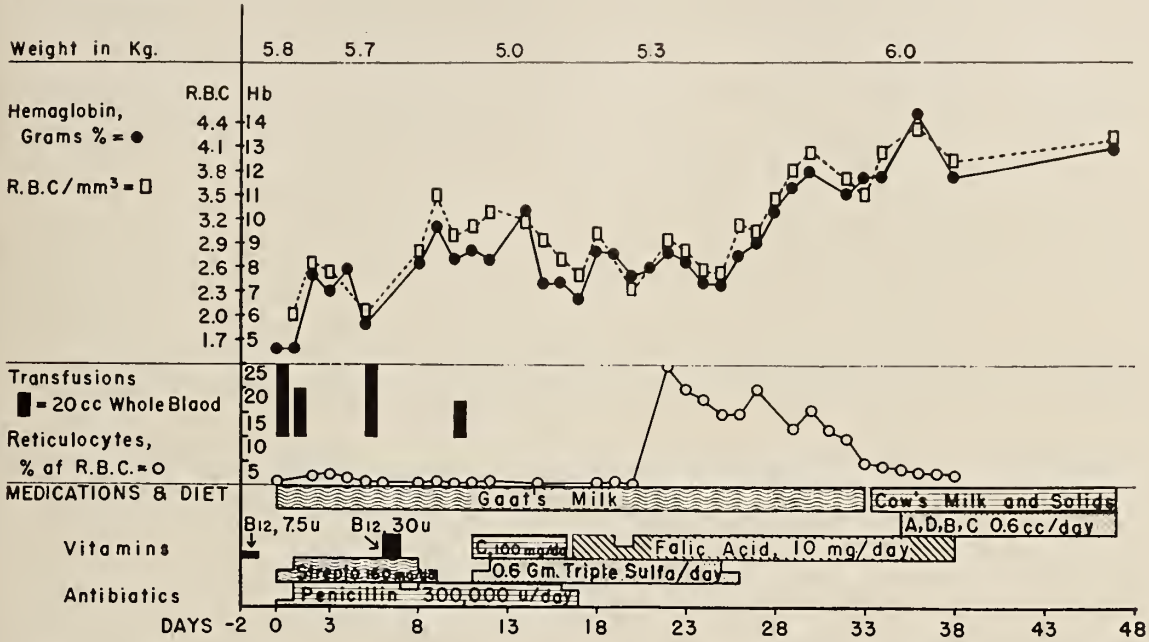
Chart 1.—Megaloblastic anemia of infancy; failure of response to vitamin B_{12} and vitamin C; subsequent improvement on administration of folic acid.



When the patient was brought to a physician because of coughing, vomiting, anorexia and diarrhea a diagnosis of pertussis was made although routine immunizations including a series of three antipertussis injections had been completed.

The illness did not respond to hyperimmune pertussis serum and after two months of continued coughing, a two-day course of aureomycin was administered without improvement. In the next two weeks increasing pallor became noticeable and some swelling of the extremities developed. Two days before hospitalization two intramuscular injections of Vitamin B_1 and one intramuscular injection of 7.5 micrograms of Vitamin B_{12} were administered. There was no improvement in the infant's condition, and two days later she was admitted to Children's Hospital.

On physical examination the infant was observed to be waxen pale and acutely and chronically ill, with grunting respirations and a rectal temperature of 99.2° F. The tympanic membranes in both ears were bulging and there was discharge of caseous material from the left ear. The liver edge was palpable 2 cm. below the right costal margin; the spleen was not palpable. There was edema of the feet, but no other physical or neurological abnormalities were noted.

On the day of admission erythrocytes numbered 910,000 per cu. mm. of blood and the hemoglobin content in the blood was 4.8 gm. per 100 cc. Sixty cubic centimeters of whole blood was administered immediately. Except for the presence of megaloblasts in a ratio of 6.2 per cent, the bone marrow appeared normal.

On the following day the leukocytes numbered 19,600 per cu. mm., of which granulocytes were 43 per cent, lymphocytes 54 per cent, monocytes 2 per cent, and reticulocytes 0.8 per cent; the platelets appeared to be normal. The non-protein nitrogen content of the blood was 35 mg. per 100 cc.; proteins in the plasma amounted to 4.16 gm. of albumin and 1.11 gm. of globulin per 100 cc. On gastric analysis on the eighteenth day after admission, free hydrochloride was not found and total acidity was estimated at 9.60 units or 0.035 per cent. Results of a tuberculin test and of urinalysis were normal. No abnormality was observed in roentgenograms of the chest and long bones.

Chart 1 summarizes the course and treatment of the illness during the subsequent 45 days the patient was under observation. During the first six days of hospitalization blood transfusions, penicillin and streptomycin were administered until the hemoglobin content became stabilized at 8 gm. per 100 cc. and the otitis media subsided. The only food given was goat's milk obtained from the same source as that used before hospitalization; no vitamins were added.

On examination of aspirate from the bone marrow on the sixth hospital day, megaloblasts were observed to have increased to 27 per cent; on that day, therefore, 30 micrograms of vitamin B_{12} was injected intramuscularly. No change in the megaloblastic pattern was observed in examination of bone marrow aspirate taken on the tenth and twelfth hospital days.

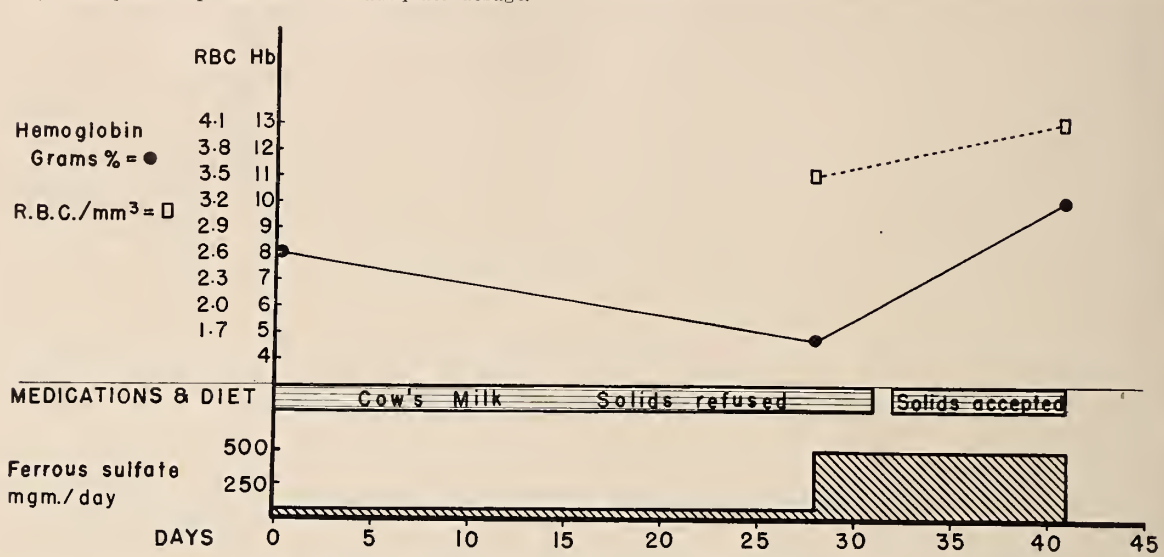
On the twelfth day 100 mg. of vitamin C was administered parenterally, and this therapy was continued for six additional days, after which, in the fifth specimen aspirated from the bone marrow, the proportion of megaloblasts was found to be 23 per cent. By this time the infant's general condition, which had been poor on entry, had further deteriorated; she became extremely apathetic and listless. The goat's milk formula had to be given by gavage; she continued to lose weight, and aspiration of bone marrow for further observation had to be discontinued because of the poor condition of the patient.

Thereupon, folic acid was administered orally in daily doses of 10 mg.;* there followed a sustained reticulocytosis and regeneration of blood (Chart 1). The infant gained weight and her general condition improved without further addition to the diet.

During the course of therapy numerous cultures were made of the stools to ascertain the nature of the flora in the gastrointestinal tract. On all cultures colonies of Escherichia coli and Bacillus aerogenes were too numerous to count, and a few colonies of the para colon group were present; but no pathogenic agents were noted.

*No conclusion has been reached regarding the minimal effective dosage of folic acid for this condition; but response has been as good on a daily dosage of 5 mg. as on larger doses.

Chart 2.—Anemia due to iron deficiency in an eight-month-old infant; failure of response to inadequate amounts of iron; subsequent improvement with adequate dosage.



Case 2.—An eight-month-old female was brought to the hematology research laboratory in September 1950. She had been well until mild upper respiratory infection developed four weeks previously. The physician who treated the patient at that time noted slight pallor, and upon examination of the blood it was noted that the hemoglobin content was 7.5 gm. per 100 cc. The physician prescribed a proprietary medicine containing ferrous sulfate. The preparation was given in the amount recommended on the label as the prophylactic dose—ten drops per day (added to one of the milk feedings) which supplied approximately 10 mg. of iron in 25 mg. of ferrous sulfate. Twenty-seven days later the hemoglobin content was 5.6 gm. per 100 cc., and the patient was referred to the laboratory.

Pallor was the only abnormality observed on physical examination. The characteristic hypochromasia and microcytosis of anemia due to iron deficiency were observed in the blood. There were 3,480,000 erythrocytes per cu. mm. and the hemoglobin content was 4.9 gm. per 100 cc. The leukocytes and platelets were normal in number and appearance. A diagnosis of anemia due to iron deficiency was made.

The dosage of ferrous sulfate was increased twenty-fold, to 500 mg. per day;* no other change was instituted in the care of the infant. During the following thirteen days the general condition of the patient improved remarkably and she regained her appetite for foods in addition to milk. The clinical course is illustrated in Chart 2.

Several cases similar to Case 2 are encountered each year at the Los Angeles Children's Hospital. Nevertheless, pediatricians are frequently offered some new iron preparation for which the claim is made that it is more effective than those previously used, the implication being that the new preparation can be employed in a reduced dose. In some instances, the labeling of the package does not make it clear whether the recommended dose is for therapeutic or prophylactic purpose.

For treatment of anemia due to iron deficiency in infants, the minimum dose of ferrous sulfate is 0.3 gm. daily, regardless of the age of the infant or the severity of the anemia. The most effectual method of administration has been stated recently by McLean: "This salt is best given in liquid form as a syrup or elixir on an empty stomach. It can be given alone, with plain water or with fruit juices. There is no evidence to justify the addition of adjuvant substances to the iron in iron deficiency anemia."[4]

DISCUSSION

Pediatricians are called upon to treat mild or moderate pallor and anemia in infants over four months of age in many cases in which it is impractical to undertake an exhaustive hematologic analysis of the condition. The physician may prescribe a therapeutic mixture which compensates for the commoner nutritional deficiencies leading to anemia. If he does so, he should recognize that anemia of the kind which characteristically develops in premature infants during the first three months of life is not remedied by administration of iron and/or folic acid, and that if there is no distinct hematic response to adequate dosage within two weeks another cause for the anemia must be suspected and careful hematologic studies made. In most cases, however, the cause of anemia in infants is lack of iron due to nutritional deficiency; but the possibility of loss of blood must be remembered, and inquiry should be made regarding signs of gastrointestinal bleeding.

The two cases presented illustrate three common errors in the treatment of anemia in infants: (1) An insufficient quantity of iron is prescribed for anemia due to iron deficiency; (2) remedies for pernicious anemia other than folic acid are prescribed to treat possible megaloblastic anemia; (3) other vitamins such as A, B, C and D, important in infant nutrition but of no specific hematologic value, are prescribed while the specific hematinics are ignored.

*The therapeutic daily dose of ferrous sulfate for the treatment of anemia due to iron deficiency has been stated by numerous investigators[1,5] to be 400 to 600 mg. per day.

CONCLUSION

The ideal "broad-spectrum hematinic" for oral therapy in common cases of nutritional anemia in infants should provide 0.5 gm. of ferrous sulfate and approximately 5 mg. of folic acid per day. Other vitamins add to the expense of therapy but do not contribute to the specific hematologic action.

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REFERENCES

1. Lejwa, A.: Symposium on Nutritional Anemia, Vol. I, p. 140, October, 1947. Robert Gould Research Foundation, Inc., Cincinnati, Ohio.

2. Lubby, L. A. and Wheeler, W. E.: Megaloblastic anemia of infancy. II, Failure of response to vitamin B_{12} and the role of folic acid and vitamin C, Health Center J. Ohio State U., 3:1, Dec. 1949.

3. May, C. D., Nelson, E. N., Salmon, R. J., Lowe, C. U., Lienke, R. I. and Sunberg, R. D.: Megaloblastic anemia, Bull. Univ. Minn. Hosp., 21:208-222, Jan. 27, 1950.

4. McLean, E. B.: Iron therapy in hypochromic anemia, Pediatrics, 7:136-144, Jan. 1951.

5. Mitchell, A. G. and Nelson, W. E.: Textbook of Pediatrics, 4th Ed., 866, 1946. W. B. Saunders Company, Philadelphia.

6. Rickes, E. L., Brink, N. G., Koniuszy, F. R., Wood, T. R. and Folkers, K.: Crystalline vitamin B_{12}, Science, 107: 396-397, April 16, 1948.

7. Spies, T. D., Stone, R. E. and Aramburn, T.: Observation on the anti-anemic properties of B_{12}, South. M. J., 41: 522-523, June 1948.

8. Spies, T. D. and Suarez, R. M.: Response of tropical sprue to vitamin B_{12}, Blood, 3:1213-1220, Nov. 1948.

9. Sturgeon, P., and Carpenter, G.: Megaloblastic anemia of infancy, response to vitamin B_{12}, Blood, 5:458-467, May 1950.

10. West, R.: Activity of B_{12} in Addisonian pernicious anemia, Science, 107:398, April 16, 1948.

11. Zuelzer, W. W. and Ogden, F. W.: Megaloblastic anemia in infancy, Am. J. Dis. Child., 71:211-243, March 1946.

Encephalitis in Kern County, California, 1941-1950

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SUMMARY

Encephalitis is a challenging public health problem in Kern County and in the San Joaquin Valley area.

During the last ten years the authors have studied the epidemiology of encephalitides due to arthropod-borne viruses and the methods used in the differential dignosis of these conditions. To incriminate a virus it is necessary to demonstrate a rise in antibody titer in the blood over a period of seven to fourteen days, the first specimen to be taken as soon as possible after onset of symptoms. A variety of tests may be necessary in some cases.

Among the patients included in this presentation the greater number of those with encephalitis and also of those with poliomyelitis were under 30 years of age. The age range was five weeks to 49 years. The median annual mortality rate was 4.3 deaths per 100 cases for poliomyelitis and 3.9 for encephalitis. The greatest incidence occurred during the summer months.

The clinical manifestations usually observed in encephalitis are described, but it is emphasized that wide variations and even completely atypical clinical phenomena are encountered. Four representative cases are reported and treatment is discussed.

Vaccination and vector control are considered as the most promising means of combating the disease.

DURING the last ten-year period, encephalitis* has occurred in epidemic, sporadic outbreaks and with endemic regularity in Kern County.

From 1941 to 1950, inclusive, 368 cases of encephalitis were diagnosed and reported as caused by a specific virus, either the western equine or the St. Louis strain, or of undetermined cause yet clinically of a pattern similar to that of western equine or St. Louis encephalomyelitis. The greatest number of cases of encephalitis reported in any one year during the ten-year period was 105, in 1945; the smallest number was six, in 1941. In the previous decade, 1931 to 1940 inclusive, 90 cases of encephalitis were reported.

Incomplete studies of this 20-year period indicate that the increase in number of reported cases may be attributed at least in part to improved diagnosis and reporting; but because of the high mortality rate, the difficulty of differential diagnosis, and the existence of unidentified pathogenic viral agents, encephalitis continues to be a challenging public health problem in Kern and other San Joaquin Valley counties.

In 1930, Meyer, Haring and Howitt[9] first isolated a virus from the brain tissue of infected horses in California. As early as 1932, Meyer suspected the occurrence of equine encephalomyelitis in humans when the disease was reported in three men working with horses known to have had the disease. No virus, however, was recovered at that time.

In 1938, Fothergill[3] and co-workers reported obtaining the eastern strain of the equine virus from human cases in Massachusetts, while in the same year the relationship of the western strain to man was first established by Howitt[5] in California. Howitt introduced the statewide use of blood serum neutralization tests in 1939; and, with the aid of other diagnostic information from various sources, a different viewpoint was developed in the San Joaquin Valley areas concerning neurotropic virus diseases. Meyer was one of the first experimental workers to suggest that cases of mild encephalitis might be inaccurately reported as non-paralytic poliomyelitis or be missed entirely.

In the last ten-year period in the Kern County Health Department and the Kern General Hospital, the authors have been primarily interested in epidemiologic and diagnostic studies of the encephalitides caused by the arthropod-borne viral agents and all other viral, viral-like or bacterial infections which might be difficult to differentiate clinically.

During this time, the western equine virus was obtained from the brain tissue of patients in two instances. The strain of the western equine virus isolated in California in 1938 was used throughout the virus studies in Kern County cases, while the St. Louis virus was one originally sent by Dr. L. T. Webster of the Rockefeller Institute. Whenever material could be obtained, 10 per cent suspensions of brain or spinal cord material obtained at autopsy were inoculated into mice, guinea pigs and a monkey. Upon recovery of a virus from one or all of these animals, further serological and immunological tests were made to determine the type.

In one three-year period 316 patients were carefully examined for neurotropic virus disease at Kern General Hospital—71 patients in 1938, 160 in 1939

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* In this presentation, "encephalitis" refers primarily to those neutrotropic diseases caused by viruses borne by specific arthropods.

and 85 in 1940.[1] Of this number, 116 were segregated as having St. Louis or western equine encephalitis on the basis of clinical and laboratory data including several blood serum neutralization tests. This three-year study formed the background for future study of encephalitis.

During the ten-year period 1941 to 1950, hundreds of serological tests of blood from humans, animals and birds in Kern County known to have or suspected of having encephalitis and poliomyelitis, and of blood from normal persons, were carried out. The technique for performing each of the commonly used neutralization tests was described by Hammon[4] in "Diagnostic Procedures for Virus and Rickettsial Diseases" in 1948, and the significance, applicability, limitations and interpretations were described by Sather and Hammon.

In early studies of encephalitis it was found that in order to incriminate a virus as the cause of the infection it was necessary to demonstrate a rise in antibody titer between two serum specimens taken at 7- to 14-day intervals, the first specimen to be obtained at the earliest possible moment after the onset of symptoms. In western equine encephalitis, neutralizing antibodies may have begun to develop at the first recognizable signs of illness and the highest titer may be reached by the end of the first week, whereas St. Louis encephalitis antibodies rise much more slowly and may not attain a significant level for several weeks. There is never any overlapping of the time patterns of antibody response in these two diseases. However, some overlapping of response time as between the St. Louis virus and organisms of the Japanese B-West Nile group has been reported. In western equine encephalitis the complement fixation antibody is occasionally slow to appear, and some variation of the neutralization test usually gives a more clear-cut rise in titer than does the complement fixation test. Use of both types of test on a specimen, although causing a discouraging delay in reporting, gives more reliable information.

EPIDEMIOLOGY

In the early days much emphasis was placed on inapparent infections when studying clinical cases of this disease. Perhaps too much stress was placed upon rural environmental and occupational hazards. Ultimately these factors proved significant but not stable. The pattern of incidence of cases in successive years indicated focalized rural distribution. In the farming districts where the horse population was greater, more of the human cases occurred; however, close correlation between horse and human infections could not be shown uniformly. There were 187 reported cases of encephalitis in horses in Kern County in the ten-year period 1941 to 1950, inclusive. The diagnosis, made by Kern County veterinarians, was based upon clinical evaluation and, in most cases, upon results of blood neutralization tests.

During the ten-year period 1941-1950, there were 368 cases of infectious encephalitis and other suspicious conditions reported to the Kern County Health Department for field work and follow-up studies. A greater number of cases occurred in persons under 30 years of age and in males. During this period, the youngest patient was five weeks of age (reported for 1949); the oldest was 71 years of age (reported for 1950).

Similar data on poliomyelitis for the same period show approximately the same pattern. There were 670 cases of poliomyelitis reported during this time, a greater number in persons under 30 years of age and in males. The youngest patient was five weeks of age (reported for 1948), and the oldest was 49 years of age (reported for 1941). From these data it may be assumed that both diseases are more characteristic of the younger age groups. An example of distribution by age and sex of encephalitis as compared with poliomyelitis is shown for the period 1948 to 1950 in Table 1. Complete data for this age and sex distribution were not available for the ten-year period being studied.

The greatest number of poliomyelitis cases reported in any one year during the ten-year period was 234 in 1948; the least number was 7 cases in 1942.

Table 2 shows the number of deaths per 100 cases due to poliomyelitis and encephalitis for Kern County during the ten-year period 1941-1950. The highest annual mortality rate reported for poliomyelitis was 13 per cent in 1943; that for encephalitis was 14.3 per cent in 1942. The median annual mortality rate* was 4.3 per 100 cases for poliomyelitis and 3.9 per 100 for encephalitis.

There was a definite seasonal variation in the incidence of these diseases during the ten-year period, with the greatest incidence occurring during the months of July, August and September.

Geographical concentration of cases also was noted. Of 1,498 cases of encephalitis reported in the state of California during this ten-year period, 958

* The median rate was derived by arranging mortality rates for the ten-year period according to magnitude and computing the arithmetical mean of the two middle rates.

TABLE 1.—*Reported Cases of Encephalitis and Poliomyelitis by Sex and Age Groups—Kern County, 1948-1950*

Year	Disease	Sex: Male No.	Male Per Cent	Female No.	Female Per Cent	Total No. Cases	Under 1 Year No.	Under 1 Year Per Cent	1 to 9 Years No.	1 to 9 Years Per Cent	10 to 19 Years No.	10 to 19 Years Per Cent	20 Years and Over No.	20 Years and Over Per Cent
1948	Encephalitis	12	54.5	10	45.5	22	3	13.6	9	40.9	6	27.3	4	18.2
	Poliomyelitis	129	55.1	105	44.8	234	8	0.3	144	61.5	46	19.6	36	15.3
1949	Encephalitis	20	76.9	6	23.1	26	1	3.8	8	30.8	6	23.1	11	42.3
	Poliomyelitis	42	56.0	33	44.0	75	4	5.3	49	65.3	12	16.0	10	13.3
1950	Encephalitis	45	60.8	29	39.2	74	7	9.4	24	32.4	6	8.1	37	50.0
	Poliomyelitis	15	40.5	22	59.5	37	0		20	54.1	8	21.6	9	24.3

TABLE 2.—*Mortality Rates from Encephalitis and Poliomyelitis—Kern County, 1941-1950*

Year	Deaths Per 100 Cases	
	Encephalitis	Poliomyelitis
1941	0	0
1942	4.0	14.3
1943	13.0	4.8
1944	12.5	0
1945	2.8	10.5
1946	3.8	3.8
1947	5.6	11.1
1948	0	6.4
1949	3.8	0
1950	4.0	2.7

(64 per cent) were in the San Joaquin Valley (Kern, Tulare, Kings, Fresno, Madera, Merced, Stanislaus and San Joaquin counties), and 364 cases (24.3 per cent) in Kern County alone. Kern County had the largest percentage of cases (38 per cent) in the San Joaquin Valley. Fresno County was next (23.7 per cent). (Fresno and Kern counties have the largest area and the greater population of the eight counties in the valley area.) As to geographical distribution of cases of poliomyelitis and encephalitis in Kern County for one specific year (1950), the largest concentration was in the more populous towns (Bakersfield, Delano, Shafter and Wasco). It is noteworthy that only one case of encephalitis and two cases of poliomyelitis occurred in the eastern desert area of the county during 1950.

The 74 cases of encephalitis reported in Kern County in 1950 included nine diagnosed and confirmed as western equine, 26 diagnosed as of the St. Louis type and 39 cases of clinical encephalitis in which the specific causative agent was not determined. In addition there were 17 cases diagnosed as mumps encephalitis, but these were not included in the 74 cases mentioned above. Mumps encephalitis was not diagnosed or reported unless there was demonstrated a definite rise in complement fixation antibody titer in two successive serologic studies, with the first specimen taken as near to the time of onset as possible and the second at the end of the first or second week.

Of special interest is the observation that of 17 patients with proven cases of mumps encephalitis diagnosed in 1950, only eight had clinical manifestation of parotitis at any time. This emphasizes the difficulty of differentiating mumps encephalitis if it should occur simultaneously with arthropod-borne encephalitis.

CLINICAL PICTURE AND DIFFERENTIAL DIAGNOSIS

The clinical picture of encephalitis follows a characteristic pattern in most instances. After an incubation period of from five to twelve days, symptoms of malaise, headache and gastrointestinal disturbances are noted. Early symptoms are followed within 24 to 48 hours by fever, vomiting, tremor, twitching, ataxia, convulsive seizures, diplopia and sometimes paralysis. The fulminating epidemic disease is sometimes fatal within the first few days of illness. In the authors' series, all but a few of the patients made complete recovery.

As a rule, the acute manifestations last about one week, extremes being one to three weeks. Cyanosis, irritability, tremor and muscle twitching and residual spastic paralysis occur in many cases. Many of the fatal cases cause extremely high temperatures and convulsive seizures. In many cases the leukocyte count is elevated to 12,000 to 16,000 per cu. mm.

The spinal fluid of most patients has a ground glass appearance; the globulin content is increased to 4 plus; the pressure is slightly higher than normal, and the number of leukocytes and the proportion of polymorphonuclear cells vary considerably. In a series of cases in a three-year period, the proportion of polymorphonuclear cells ranged from 52 per cent to 78.5 per cent.

Many exceptions and wide variations occur in the manifestations of encephalitis, and in some cases the clinical features are entirely atypical. In differential diagnostic studies over the ten-year period covered by this report, it was noted particularly that at one time during the clinical illness in each case the identification of the encephalitic factor was problematical. Cases in 1950, a year in which clinical and epidemiologic records were most complete, were classified into three major groups as indicated below.

In Group I (purulent meningitis) there were 45 cases. The summary of diagnoses in this group included 12 of meningococcal meningitis, nine of influenzal meningitis, two of pneumococcal meningitis, one of staphylococcic meningitis, one of pertussis meningitis and 20 in which the causative factor was not determined.

In Group II (granulomatous meningitides) there were 25 cases, which included 13 cases of tuberculous meningitis, 5 cases of luetic meningitis, and 7 cases of coccidioidal meningitis.

In Group III (viral encephalitides) there were 130 cases, including 25 cases of St. Louis encephalitis, 9 of western equine encephalitis, 40 of encephalitis of undetermined origin, 36 of poliomyelitis, 1 of postvaccinal encephalitis (following rabies immunization), 2 of chickenpox encephalitis and 17 of proven mumps encephalitis.

In addition to these three groups, there were 12 cases in which clinical symptoms and results of laboratory studies indicated encephalitis but the encephalitic factor was not diagnosed.

The following four case reports, three of them on cases of arthropod-borne encephalitis and one on a case of mumps encephalitis, are presented as typical.

CASE REPORTS

CASE 1.—A white male, aged 15 months, became ill Aug. 18, 1950, and was admitted to the Kern General Hospital. Symptoms reported by the patient's mother were irritability, stiffness of the neck, convulsions, and temperature of 104.6° F. On examination, neck stiffness, scattered rales throughout the chest, hyperactive reflexes and general irritability were noted. A preliminary diagnosis of possible encephalitis was made.

On x-ray examination August 23 the chest appeared normal. The urine, examined the following day, was normal. The hemoglobin value in the blood was 75 per cent. Erythrocytes numbered 3,850,000 per cu. mm., and leukocytes 17,000—33 per cent lymphocytes, 5 per cent monocytes, 5

per cent stab cells and 57 per cent segmented cells. Mantoux and coccidioidin skin tests made Aug. 28 showed no abnormality. When the spine was tapped Aug. 31, no increase in pressure was noted. The fluid was slightly cloudy and contained 337 cells per cu. mm.—10 per cent polymorphonuclear and 90 per cent lymphocytes. The total protein content was 35 mg. per 100 cc. and the sugar content was normal.

The patient received routine care including administration of penicillin and symptomatic treatment. Clinical recovery was uneventful and the patient was discharged Sept. 18, 1950. The cell content of the spinal fluid on that day was 22 per cu. mm.—all lymphocytes. The final diagnosis was St. Louis encephalitis.

A field follow-up to inspect the patient's home environment was made by a public health nurse, a sanitarian, and a mosquito abatement inspector. Although an unusually high number of mosquitoes was noted in the neighborhood, neither the mother nor the physicians who examined the patient found any physical evidence of mosquito bites or any significant, pertinent relationship of the presence of mosquitoes to the illness.

In tests of blood samples submitted to the State Public Health Virus Laboratory on Aug. 25 and Sept. 18, positive complement fixation antibody titer for St. Louis encephalitis in dilution of 1:128 was noted. The patient was examined twice in the pediatric clinic of the Kern General Hospital (on Sept. 18 and Oct. 23, 1950) and subsequently made complete and satisfactory recovery.

Case 2.—A white male, 35 years of age, became ill on Aug. 29, 1950, and was admitted to Kern General Hospital on Sept. 1. Symptoms upon admission were stiffness of the neck, semi-coma, irritability, headache, high temperature and hyperactive reflexes with some spasticity. The preliminary diagnosis was encephalitis.

In a spinal fluid examination made outside the hospital on Aug. 30 the sugar content had been estimated at 65 mg. per 100 cc. and the total proteins at 36 mg. per 100 cc.; there were 79 cells per cu. mm.—2 per cent polymorphonuclear and 98 per cent lymphocytes. On Sept. 1 there was a slight increase in spinal fluid pressure. The fluid was slightly cloudy; the sugar content was 78 mg. and the total protein content 87 mg. per 100 cc.

On urinalysis Sept. 3, albumin content was found to be 2 plus and sugar content 2 plus; there were a few granular and hyaline casts.

The hemoglobin value in the blood on the same day was 85 per cent, and leukocytes numbered 5,700 per cu. mm.—20 per cent lymphocytes, 6 per cent monocytes, 1 per cent basophils, 7 per cent stab cells and 66 per cent segmented cells.

On Sept. 5 there were 216 leukocytes per cu. mm. in the spinal fluid, and reaction to a Pandy test was positive.

Blood specimens were submitted to the State Laboratory of Public Health Department on Sept. 2 and Sept. 6 and a positive complement fixation antibody titer for St. Louis encephalitis was demonstrated. St. Louis encephalitis was the final diagnosis.

Great numbers of mosquitoes in the patient's home neighborhood were reported by public health nurses and sanitarians. The patient lived close to a race track; however, no illness was known to have occurred in the horses.

Despite treatment, the condition of the patient became steadily worse. After 48 hours in a more or less comatose state, the patient died on Sept. 16.

Case 3.—A white male 37 year of age was admitted to Kern General Hospital Aug. 27, 1950, with stiffness of the neck, headache, irritability, hyperactive reflexes, nausea and high temperature. The result of a coccidioidin skin test was 3 plus and of a Mantoux skin test 2 plus. A previous coccidioidin skin test had given a negative result. The tentative diagnosis was encephalitis.

Spinal fluid examined the same day contained 33 leukocytes per cu. mm.—32 per cent were polymorphonuclear cells and 68 per cent lymphocytes. The total protein content was 67 mg. per 100 cc. The hemoglobin value in the blood was 91 per cent; there were 7,100 leukocytes per cu. mm.—29 per cent lymphocytes, 3 per cent monocytes, 1 per cent eosinophils and 67 per cent segmented forms. No virus was demonstrated in a specimen of blood taken that day or in another taken Sept. 6.

The specific gravity of the urine was 1.017. There were 10 to 12 leukocytes per high dry field. No albumin or sugar was noted.

Spinal fluid examined Aug. 31 contained 19 leukocytes per cu. mm.—all lymphocytes.

The final diagnosis of western equine encephalitis was based on rise in titer of specific antibodies in the blood in a test made Nov. 17. The patient recovered completely.

Case 4.—A 12-year-old white male became ill Feb. 15, 1950, with high temperature and stiffness of the neck but no evidence of parotitis.

Occasional erythrocytes and leukocytes were noted in the urine on Feb. 17. No albumin or sugar was present. The spinal fluid contained 680 leukocytes per cu. mm.—some polymorphonuclear, 80 per cent lymphocytes; the sugar content was 62 mg. per 100 cc., and the total protein was 41 mg. per 100 cc.; response to a Pandy test was negative. The hemoglobin value in the blood was 89 per cent; there were 8,400 leukocytes per cu. mm.—37 per cent lymphocytes, 3 per cent eosinophils, 6 per cent stab cells, 54 per cent segmented cells; the sedimentation rate was 4 mm. in on hour, and packed red cells were 40 per cent of the whole blood.

On Feb. 20 the specific gravity of the urine was 1.008 and it contained no albumin or sugar. The spinal fluid on Feb. 21 contained 1,350 leukocytes per cu. mm.—40 per cent polymorphonuclear cells, 60 per cent lymphocytes. No pathogenic organisms were noted in examination of smears of the spinal fluid and none grew on cultures. The sugar content was 35 mg. per 100 cc. and the total protein content was 90 mg. per 100 cc.

The patient was kept at rest in bed and treated with hot packs. Penicillin was administered.

The California Virus Laboratory reported that in tests on a specimen of blood submitted Feb. 17 the presence of mumps virus was noted. Results of tests were negative for the viruses of western equine or St. Louis encephalitis.

The patient recovered. On March 9 the spinal fluid contained 52 leukocytes per cu. mm.—4 per cent polymorphonuclear cells, 96 per cent lymphocytes; the sugar content was 62 mg. per 100 cc. and the total protein content was 41 mg. per 100 cc.

Since the clinical symptoms were not distinctive, the diagnosis could not have been made without the demonstration by titration of mumps antibody and the abnormalities in the spinal fluid.

TREATMENT AND CONTROL

In the ten-year series of cases here presented, active treatment during the acute and following stages of encephalitis was entirely nonspecific. During the acute phases treatment was directed chiefly to the relief of acute neurogenic symptoms. In many cases the muscles were spastic. Hot packs and modi-

fied Kenny treatment were used with good effect in the relief of severe muscle tension.

Rivers[10] came to the conclusion that the treatment with immune sera is, with few exceptions, valueless if it is begun after onset of definite clinical symptoms of viral infection. Sulfonamide compounds do not affect the virus or, in animal experiments, the disease induced by it. The use of these drugs proved of no value in the cases observed by the authors. All of the other antibiotics were used but none altered the clinical course of the viral disease.

Since no specific treatment for encephalitis is known, emphasis on control measures seems indicated. Formolized chick embryo vaccine is used routinely by Kern County veterinarians to prevent the disease, primarily in equine animals. It has obtained the approval of the U. S. Bureau of Animal Industry as an effective means of prophylaxis. Recommendations concerning the use of such a vaccine in man must await the outcome of controlled tests in the field under epidemic conditions. Nevertheless, in the interim, it is being used for workers in laboratories and for persons especially exposed to the virus. For passive immunization, a specific antiserum has been used successfully in experimental animals, but no adequate trial has been made in humans.

Since arthropods, especially mosquitoes, are considered to be the common vectors, the Kern County Mosquito Abatement District has taken thorough measures to eradicate these insects.

Not all species of animals and birds which harbor the viruses of encephalitis have been so identified; besides man and the equine animals, certain species of wild birds and domestic fowl are known to be hosts. Among the vectors which have been and should be the object of control measures are wild bird and chicken mites, wood ticks, cone-nosed kissing bugs and any suspicious blood-sucking insects in areas where encephalitis is endemic.

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REFERENCES

1. Buss, W. C., and Howitt, B. F.: Human equine encephalomyelitis in Kern County, California—1938, 1939, and 1940, Am. J. Public Health, 31:935, Sept. 1941.

2. California State Department of Public Health, Bureau of Acute Communicable Disease Control: Personal communications and records.

3. Fothergill, LeR., Dingle, J. H., Farber, S., and Connerly, M. D.: Human encephalitis caused by the eastern variety of equine encephalomyelitis, New England J. Med., 219:411, Sept. 22, 1938.

4. Hammond, W. McD.: Unpublished data.

5. Howitt, B. F.: Viruses of equine and of St. Louis encephalitis in relationship to human infections in California, 1937-38, Am. J. Pub. Health, 29:1083, Oct. 1939.

6. Kern County Department of Public Health, Division of Vital Statistics: Laboratory, morbidity, and epidemiological records.

7. Kern General Hospital: Laboratory reports.

8. Lennette, E. H., and Koprowski, H.: Neutralization tests with certain neurotropic viruses: A comparison of the sensitivity of the extraneural and intracerebral routes of inoculation for the detection of antibodies, J. Immunol., 49: 375, Dec. 1944.

9. Meyer, K. F., Haring, C. M., and Howitt, B. F.: The etiology of epizootic encephalomyelitis of horses in the San Joaquin Valley, 1930, Science, 74:227, Aug. 28, 1931.

10. Rivers, et al.: Viral and Rickettsial Infections of Man. J. B. Lippincott Co., 1948.

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For Information on Preparation of Manuscript, See Advertising Page 2

EDITORIAL

Culmination

Within another month Doctor John W. Cline of San Francisco will turn over the presidency of the American Medical Association to his succesor. At that time he will be relieved of the many burdensome duties which have accompanied his two years as president-elect and then president of the world's largest medical organization.

As the time approaches for another A.M.A. chief to take office, a review of Doctor Cline's activities is indicated, both for the lesson available to others and for the moral to be learned from a man who knew where he was going, how to get there and how to bring others along with him.

John Cline entered the official ranks of the American Medical Association only seven years ago, when he first became a Delegate from California. In his first few sessions of the A.M.A. House of Delegates he encountered opposition, if not downright antagonism, to many of the subjects he broached in behalf of his fellow physicians in his home state. The California delegation in the A.M.A. had not enjoyed too high a respect from some other sections of the country and when Doctor Cline and his fellow delegates came along with such unmentionable ideas as revising the top management force of the parent organization, they did little to increase their own popularity.

Perseverance, however, began to bear fruit as more and more members of the House of Delegates came to listen more attentively to the logic, the reason and the forcefulness of the proposals made by the Californians. Doctor Cline was in the forefront of this campaign, ever ready to speak with his well-ordered vigor, always willing to listen to the other fellow and to compose differences which did not conflict with the principles he and his associates held to be vital for the good of American medicine.

As the California ideas came to be more favorably accepted in the A.M.A. House of Delegates, other changes took place. Some shifts in personnel, both at the policy-making and at the administrative level, brought forth a stronger organization, one more fully equipped to deal with the problems of the times. Doctor Cline remained at the head of this transformation, urging the positive and aggressive steps needed to create a better A.M.A. His exceptional ability to speak, undoubtedly stemming from his pre-medical debating team days, and his self-evident leadership, again going back to his collegiate experiences, stood him in excellent stead.

Doctor Cline has an ability to sway an audience which is not granted to many men. He is possessed of the innate capacity to grasp a situation, translate it into coherent and understandable terms and transmit it to those working with him. This faculty, from a standing start, impressed itself so indelibly on the minds of the delegates in the A.M.A. that, without waiting for John Cline to go through subordinate offices, they unanimously elected him in 1950 as president-elect of the American Medical Association.

Once in that position, Doctor Cline continued to use well his administrative and persuasive talents. Without stint, without regard to the amount of time demanded of him, he set forth to carry the story of the new A.M.A. to the country. Speaking engagements flooded in on him and, to his credit, he accepted them wherever it was humanly possible to do so. His travels in the past two years have taken him to Europe, to the islands of the Pacific, to military installations all over the country and in Europe, to lay audiences in public meetings and on radio programs, to debates, to forum sessions and, more important, to medical audiences in practically every state in the country.

In all of these places Doctor Cline has followed out his original theme of the good in American medicine, of the positive approach to matters of

public interest, of the development of voluntary prepaid health insurance, of the strides made by medicine in an atmosphere of freedom and professional integrity. Certainly it does not in the least discredit the abilities of other advocates in the same field to say that undoubtedly John Cline has been the foremost proponent, the most effective, in carrying this story to the American people.

An example of his unstinting devotion to this duty can be gained from a review of just one of his travel itineraries last year. In a period of five weeks he went from San Francisco to Denver, Kansas City, St. Louis, Louisville, Memphis, Atlanta, Miami, Washington, Wilmington, New York, Portland, San Francisco, New York, New Haven, New York, San Francisco, Reno, Los Angeles, St. Louis, Pittsburgh, Chicago, Grand Rapids, Chicago, Denver, Rock Springs, Wyoming and thence back to San Francisco.

In carrying out other itineraries of comparable scope, and in spending more than two-thirds of his time away from his own professional office, John Cline has racked up a new record high mileage in the history of United Air Lines. By the close of his term of office in the A.M.A. he will have traveled more miles in one year than any other passenger in United's history. Next month he will have completed more than 125,000 miles of air travel in one year.

Next month John Cline will lay down his reins in the A.M.A. We know he will still be called upon by that body to lend his talents for the good of medicine, but he will be relieved of his multitudinous and arduous duties as the top elective officer. We will welcome him back to California, his birthplace and his home. We will welcome back in our own ranks his counsel, his capacity and his courage in his convictions. California will gain by his return.

California is proud of having contributed John Cline as a president of the American Medical Association, especially in the trying period in which he has served. For the good of medicine we hope that future A.M.A. presidents will reach and, if they can, surpass the mark that he has left during his tenure. The goal is high but the accomplishments great.

Letters to the Editor . . .

Emotional Hyperacidity

It is currently assumed that the only ways in which the stomach can be stimulated to secrete pepsin and hydrochloric acid are mediated: (a) by way of the vagus nerve, or (b) by direct action of the locally produced hormone, gastrin. Gray[1] and associates of the Peter Bent Brigham Hospital, Boston, Mass., report clinical evidence that there is a third regulating mechanism mediated through the pituitary gland. This evidence was drawn from a quantitative study of the effects of ACTH upon gastric secretion.

The basal gastric secretion was first measured in seven patients with essentially normal stomachs by inserting a Levine tube into the stomach in the morning, following a 10- to 12-hour overnight period of fasting. The stomach was then aspirated for a period of 60 to 90 minutes. The first 15-minute specimen was discarded and then three to five consecutive 15-minute aspirations were obtained by constant suction.

They found that the continuous daily administration of 100 to 160 mg. ACTH resulted in a 241 per cent increase in the basal secretion of hydrochloric acid and a 182 per cent increase in pepsin. A 194 per cent increase in uropepsin excretion was also noted, parallel to the rise in gastric juice pepsin. After discontinuation of ACTH administration, the gastric acidity, pepsin concentration, and uropepsin excretion fell to the pre-ACTH level.

Since oral or parenteral daily administration of 200 to 250 mg. cortisone leads to a similar increase in uropepsin excretion, they believe that the effect of ACTH upon gastric secretion is mediated through the adrenal cortex rather than by direct action upon the stomach. It is well established that in response to emotional or systemic stress the cells of the anterior hypothalamus secrete a humoral substance which stimulates the pituitary gland to release ACTH. From this the Boston clinicians picture their third method of gastric control as a hypothalamus-pituitary-adrenal-stomach hormonal pathway of major clinical interest.

W. H. Manwaring, M.D.
Palo Alto, Calif.

REFERENCE

1. Gray, S. J., Benson, J. A., Jr., and Reifenstein, R. W.: Effect of ACTH upon gastric secretion, Proc. Soc. Exp. Biol. and Med., 78:338, Oct. 1951.

CALIFORNIA MEDICAL ASSOCIATION

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NOTICES AND REPORTS

Executive Committee Minutes

Tentative Draft: Minutes of the 230th Meeting of the Executive Committee of the California Medical Association, San Francisco, March 26, 1952.

The meeting was called to order by Chairman Lum in Room 212 of the St. Francis Hotel, San Francisco, at 4:00 p.m., Wednesday, March 26, 1952.

Roll Call:

Present were President MacLean, President-elect Alesen, Council Chairman Shipman, Speaker Charnock and Auditing Committee Chairman Lum, Editor Wilbur and Secretary-Treasurer Daniels. No absences. Present by invitation were Dr. D. H. Murray, legislative chairman; Executive Secretary Hunton, Assistant Executive Secretary Thomas, Public Relations Director Clancy and Mr. Ben H. Read, executive secretary of the Public Health League of California. A quorum present and acting.

1. *Membership:*

(a) On motion duly made and seconded, it was voted to reinstate four members whose 1951 dues had been received since the last Council meeting.

(b) On motion duly made and seconded in each instance, it was voted to elect nine applicants to Associate Membership. These were: Elizabeth Jolly, Luigi Luzzatti, S. H. Schonberger, James K. Smith, and Helen Wolfenden, Alameda-Contra Costa; Roy D. Smith and D. V. Wiebe, Fresno County; Paul Beddoe, Los Angeles County; Charles H. Ludwig, Sonoma County.

(c) On motion duly made and seconded in each instance, 18 applicants were voted Retired Membership. These were: R. T. Sutherland, Alameda-Contra Costa; Sidney R. Burnap, Cecil C. Cole, Marie Anna Conradi, R. E. Flesher, Horace H. McCoy, Rea Proctor McGee, Albert H. Moore, Milton M. Portis, George D. Stilson, A. W. Teel, Raymond C. Thompson, and Harry D. Van Fleet, Los Angeles County; Charles M. Fox, San Diego County; Edwin I. Bartlett, LeRoy H. Briggs, Leo Eloesser, and Robert S. Irvine, San Francisco County.

(d) On motion duly made and seconded in each instance, 25 applicants were voted a reduction of dues for postgraduate study or because of protracted illness.

(e) On motion duly made and seconded, it was voted to recommend to the Council that an amendment to Chapter II, Section 4(a) of the By-Laws be proposed to the House of Delegates, to provide that applicants for Retired Membership be considered eligible for such election if they had paid their dues for the current or the preceding calendar year.

2. *Committee on Rural Health:*

A report by Dr. Henry A. Randel on behalf of the Committee on Rural Health was discussed and it was regularly moved, seconded and voted that the Association office request each county society to appoint a committee on rural health to cooperate with the statewide committee.

3. *Committee on Postgraduate Activities:*

Discussion was held on the advisability of inviting technical exhibitors to display their products at postgraduate assemblies arranged by the Committee on Postgraduate Activities. It was pointed out that such exhibits have been sponsored in some areas by the Woman's Auxiliary or the county society, rather than by the Association. On motion duly made and seconded, it was voted that all technical exhibits at any meeting of the Association be screened by the C.M.A. Committee on Advertising and that funds secured from exhibits at meetings other than the Annual Session be retained by the sponsoring group.

On motion duly made and seconded, it was voted that the policy of inviting out-of-state speakers to the Postgraduate Assemblies be approved. It was suggested that schedules should be so arranged that one speaker could cover two or more meetings and that the regional institutes be increased to ten annually.

On motion duly made and seconded, it was voted to recommend to the Committee on Postgraduate Activities that its office be operated in conjunction with the proposed office of the San Joaquin County Medical Society.

4. *Committee on Hospitals, Dispensaries and Clinics:*

A report from the Committee on Hospitals, Dispensaries and Clinics, relative to California mineral

springs, was read and discussed. On motion duly made and seconded it was voted to thank the committee for its work but to table any action toward considering such mineral springs because of the apparent lack of medical properties claimed for such spas.

5. *Blood Bank Commission:*

On motion duly made and seconded, it was voted to appoint Dr. Leonard Taylor of San Bernardino as a member of the Blood Bank Commission, in compliance with a request by Dr. John R. Upton, chairman of the commission.

6. *State Department of Public Health:*

Dr. L. A. Alesen reported on a meeting held March 19 with representatives of the State Department of Public Health, at which time discussion was held on the present clinic licensing law. It was reported that the department feels that the present law may not be needed or that it might better be administered by some other state department. A further report is to be made to the Council on this subject.

7. *World Medical Association:*

A request for a renewal of a $1,000 annual subscription to the World Medical Association was considered and the executive secretary was requested to secure a report on the accomplishments and the financing of the organization. It was regularly moved, seconded and voted that, upon receipt of such report, it be recommended to the Council that the appropriation be made.

8. *American College of Physicians:*

On motion duly made and seconded, it was voted to invite the American College of Physicians, in behalf of the Association, to hold its 1955 or 1956 annual meeting in San Francisco.

9. *Conference on School Health:*

An invitation to attend an informal discussion in Los Angeles on April 9, 1952, between representatives of the State Department of Education and the Bureau of Health Education of the American Medical Association was discussed and it was agreed that Dr. Charnock would attend and report back to the Council at its next meeting.

10. *Alternate Delegate to A.M.A.:*

Report was made on the fact that Dr. A. E. Moore, elected in 1951 as an Alternate Delegate to the A.M.A., did not qualify under the A.M.A. requirement of two years of Fellowship immediately preceding such election. It was pointed out that the A.M.A. is now considering an amendment to its Constitution and By-Laws which would eliminate Fellowship and that if that is adopted, Dr. Moore would be eligible to serve. It was agreed to place this matter before the Council at its next meeting.

11. *California Physicians' Service:*

The subject of the bills submitted to C.P.S. for services not rendered was fully discussed. It was pointed out that a committee of the Association (C.P.S. Study Committee) has been investigating this matter and other phases of C.P.S.'s operations for several months. It was moved, seconded and carried that this Association's Committee on C.P.S. be directed vigorously to continue its investigation of the facts relating to false bills to C.P.S., and when it has completed its analysis of the facts that its conclusions and recommendations be incorporated in its report to the Association.

It was the further sense of the Executive Committee that the membership of the Association be made aware of the fact that the California Medical Association, through its C.P.S. Study Committee, has been and is working on the problem and will not discontinue its efforts until the conditions of which complaint has been made have been eradicated and their recurrence made impossible.

12. *California Medicine:*

Dr. Wilbur reported on a request he had received for assistance in securing advertising for county society bulletins and this was referred to the executive secretary.

On motion duly made and seconded, at the request of Dr. Wilbur, it was voted to appoint a representative of the general practitioners to membership on the Editorial Board.

13. *California Farm Bureau Federation:*

Dr. MacLean reported on a meeting held with officers of the California Farm Bureau Federation, at which a request was received for assistance in handling matters relating to the treatment of industrial injury cases. A specific outline of the problem and the assistance requested is to be filed for presentation to the Council.

14. *Public Relations:*

Dr. Charnock requested the assistance of representatives of the Department of Public Relations in working with local chapters of the Student A.M.A. and it was agreed that such assistance be granted.

15. *District Hospitals:*

Dr. MacLean reported on a meeting held with representatives of the Marin Hospital District, at which the C.M.A. was requested to make its position clear with regard to district hospitals now operating. The C.M.A. was also asked to send a representative to a coming meeting of the Association of District Hospital Directors. On motion duly made and seconded, it was voted to refer this matter to Dr. Thompson's subcommittee of the Committee on Public Health and Public Agencies for study and report to the Council.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 7:30 p.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

Anderson, George B. Died in Vallejo, February 18, 1952, aged 48. Graduate of Northwestern University Medical School, Chicago, 1939. Licensed in California in 1943. Dr. Anderson was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

✣

Bice, Clyde W. Died in Oakland, February 27, 1952, aged 75, of arteriosclerotic heart disease. Graduate of the University of Illinois College of Medicine, Chicago, 1902. Licensed in California in 1902. Dr. Bice was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✣

Condit, John C. Died in Santa Rosa, March 16, 1952, aged 79, of coronary thrombosis. Graduate of the Cooper Medical College, San Francisco, 1904. Licensed in California in 1904. Dr. Condit was a retired member of the Alameda-Contra Costa Medical Association, the California Medical Association, and an Associate Fellow of the American Medical Association.

✣

Darius, Dean J. Died in San Carlos, March 8, 1952, aged 44, of coronary artery disease. Graduate of Creighton University School of Medicine, Omaha, Neb., 1933. Licensed in California in 1933. Dr. Darius was a member of the San Mateo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✣

Davis, Henry G. Died in Boyes Springs, February 28, 1952, aged 63. Graduate of the University of Toronto Faculty of Medicine, Ontario, 1911. Licensed in California in 1923. Dr. Davis was a member of the San Francisco Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✣

Edler, William A. Died in Pasadena, October 5, 1951, aged 69, of coronary occlusion. Graduate of Washington University School of Medicine, St. Louis, Mo., 1911. Licensed in California in 1924. Dr. Edler was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an Associate Fellow of the American Medical Association.

Guggenheim, Louis K. Died March 13, 1952, aged 68, after an extended illness. Graduate of Washington University School of Medicine, St. Louis, Mo., 1905. Licensed in California in 1930. Dr. Guggenheim was a retired member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✣

Kelly, Edward H. Died in Pasadena, February 21, 1952, aged 63. Graduate of the University of Michigan Medical School, Ann Arbor, 1911. Licensed in California in 1919. Dr. Kelly was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Levine, Eugene B. Died in Los Angeles, February 26, 1952, aged 38. Graduate of the Louisiana State University School of Medicine, New Orleans, 1939. Licensed in California in 1939. Dr. Levine was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✣

Presnell, James F. Died in Los Angeles, March 1, 1952, aged 85, of coronary artery disease. Graduate of the State University of Iowa College of Medicine, Iowa City, 1889. Licensed in California in 1931. Dr. Presnell was a retired member of the Los Angeles County Medical Association, and the California Medical Association, and a Fellow of the American Medical Association.

✣

Shumate, Thomas E. Died in San Francisco, February 27, 1952, aged 80, of coronary artery disease. Graduate of the Cooper Medical College, San Francisco, 1894. Licensed in California in 1894. Dr. Shumate was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✣

Wright, LaVerne. Died in San Francisco, March 2, 1952, aged 74. Graduate of the University of Michigan Medical School, Ann Arbor, 1901. Licensed in California in 1905. Dr. Wright was a retired member of the San Francisco Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Questions and Answers about C. P. S.

Question: When did the removal of the one-year limitation on surgical services under C.P.S. surgical contracts become effective?

Answer: April 15, 1952.

Question: What significance does the removal of the one-year limitation on surgical care have, for both the physician and the member?

Answer: The removal of this limitation became effective April 15, 1952. Previous to this change a C.P.S. member was allowed listed surgical benefits for one year (from the date of operation) for each condition. In effect, the new ruling provides continual surgical care, if necessary to correct a lesion, for each condition as long as the member retains C.P.S. membership. Thus, complications or sequelae of a condition, occurring more than one year after the original date of operation, will be considered as a C.P.S. liability. The severe case which requires more than one year's care will be covered until care is no longer necessary—not terminated at the end of one year.

Questions of whether maximum care has already been provided or whether the new development is related to prior procedure need no longer concern either the physician or the member. If operation is necessary, listed benefits of C.P.S. surgical contracts will apply, without regard either to the previous one-year limitation or surgical services for the condition which the member may already have received.

Question: In the past, the one-year limitation on surgical services has meant that C.P.S. did not pay for bilateral surgical procedures when more than one year had elapsed since the first of the bilateral procedures was performed and if the basic disease was the same in each case. Will removal of the one-year limitation mean that C.P.S. henceforth will cover bilateral operation?

Answer: Yes. Removal of the one-year limitation means that C.P.S. surgical contracts will cover bilateral surgical procedures, whenever they are performed for such conditions as cataracts, hernia and fibrocystic breast conditions.

Question: Are the time limitations on C.P.S. medical and hospital contracts affected by the removal of the one-year limitation in the surgical contract?

Answer: No. The change in the C.P.S. surgical contract has no effect whatever on medical or hospital contracts.

Question: Please clarify the recent change in the medical-while-hospitalized contract which makes benefits available from the physician's first visit to the hospital, rather than the third visit.

Answer: This change (effective April 15, 1952) will mean: When patients holding medical-while-hospitalized coverage are hospitalized, it will no longer be necessary for the physician to bill the patient for the first and second visits, regardless of the condition requiring hospitalization.

Question: Does the change in the medical-while-hospitalized contract alter the two-visit-deductible medical contract?

Answer: The two-visit-deductible medical contract is not affected. Members holding two-visit-deductible medical coverage will still be responsible for the first two visits.

Question: When and where will physicians be able to see the motion picture which C.P.S. has produced showing internal functions of C.P.S.?

Answer: The film (called "The Doctors' Plan") is completed and is ready for showing to physicians at their county society meetings and hospital staff meetings. C.P.S. will contact these groups throughout the state in order to arrange scheduling of the presentation; or county societies and hospital staffs may initiate the scheduling arrangements by advising C.P.S. of dates which are most suitable. Two prints of the film have been made so it can be shown simultaneously in Northern and Southern California.

Question: I have not requested authority for treatment of a particular veteran, but I wish to write a prescription for his use. How can this be done under the home town care program?

Answer: It is necessary that the physician have a current authorization for treatment of the specific service-connected condition for which he wishes to prescribe. Requests for authorizations of this type may be made by telephone, collect, to the Veterans Administration Authorization Officer in San Francisco, Los Angeles or San Diego, explaining that authorization is desired so that a prescription may be written.

Question: In treating veteran patients, if an appointment for laboratory or x-ray services cannot be made during the authorized period, how do I again make request for these services?

Answer: The physician should request a reauthorization of the laboratory or x-ray procedures, indicating that the services previously authorized could not be performed during the period in which they were authorized.

Question: Can a veteran patient be billed for balance charges if his earnings are over the C.P.S. income ceiling?

Answer: No. The income ceiling is only for members enrolled under the C.P.S. commercial program. Fees paid by the Veterans Administration for authorized services to veteran patients under the Home Town Care Program are payments in full.

NEWS and NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Paul C. Samson of Oakland was elected president of the **California Tuberculosis and Health Association** at the recent annual meeting of the organization in San Francisco. He succeeds Dr. Emil Bogen of Olive View. Dr. Rufus Scheiders of San Diego was elected vice-president.

LOS ANGELES

Richard W. Lippman, M.D., Research Associate at the Institute for Medical Research, Cedars of Lebanon Hospital, has been elected chairman of the Southern California Section of the **Society for Experimental Biology and Medicine** for the academic year 1952-1953.

* * *

Dr. Joseph L. Robinson has been elected president and Dr. David T. Proctor vice-president of the **Los Angeles County Tuberculosis and Health Association**. Dr. Robinson and Drs. Emil Bogen, Reginald Smart, Leo Tepper and John Urabec were reelected to the board of directors of the association.

* * *

Dr. Abraham Schwartz and Dr. J. H. McClellan recently were announced as joint winners of this year's award by the California Trudeau Society. They were given the $150 prize for a paper reporting upon electroshock therapy of tuberculous patients at the Brentwood Veterans Administration Hospital.

SAN FRANCISCO

Physicians are invited to attend the semi-annual session of the **Northern California Rheumatism Association** to be held Saturday afternoon, May 24, in the auditorium of the Veterans Hospital, Fort Miley, 42nd Avenue and Clement Street, San Francisco. The program follows:

1:00 p.m.—Clinical Laboratory Aids in Rheumatic Diseases—Gerson R. Biskind, M.D.

1:20—Possible Role of Pleuropneumonia-like Organisms in Diseases of Childhood—Herve J. Carlson, M.D.

1:40—Long Range Treatment with ACTH and Cortisone—Ephraim P. Engleman, M.D.

2:00—Observations on Distribution and Fate of Gold in the Animal Body—John J. Bertrand, M.D.

2:20—The Nature of Psoriasis—Eugene M. Farber, M.D.

2:40—President's Address: The Doctor's Responsibility in the Care of the Arthritic Patient—John J. Loutsenheiser, M.D.

2:50—Recent Basic Studies concerning ACTH and Metabolism—Laurance W. Kinsell, M.D.

3:10—Evaluation of Surgical Procedures in Rheumatic Diseases—Francis J. Cox, M.D.

3:30—Pain from Skeletal Lesion—Verne Thomson Inman, M.D.

3:50—Certain Vascular Aspects of Arthritic Disease—Norman E. Freeman, M.D.

4:10—Intra-articular Use of Compound F—Roland Davison, M.D.

TULARE

The Tulare County Medical Society announced its **second annual postgraduate program**, under the auspices of the California Medical Association, Committee on Postgraduate Activities, to be held Sunday, May 18, at the Hotel Johnson, Visalia. The program will begin at 9 a.m. and continue until 5 p.m. The speakers and their subjects:

Daniel G. Morton, M.D., professor and chairman of the department of obstetrics and gynecology, University of California at Los Angeles—"Indications for Gynecological Surgery" and "Office Gynecological Procedures."

William L. Hewitt, M.D., clinical assistant professor of medicine, U.C.L.A.—"Recent Advances in the Use of Antibiotic Agents," and "Complications Following the Use of Antibiotic Drugs."

Paul E. McMasters, M.D., clinical professor of surgery (orthopedics), U.C.L.A.—"Treatment of Common Fractures," and "Treatment of the Complications of Fractures."

A registration fee of $5.00 will be charged to help defray the expense of the program.

GENERAL

The 30th annual scientific and clinical session of the **American Congress of Physical Medicine** will be held on August 25, 26, 27, 28 and 29, 1952, inclusive, at the Roosevelt Hotel, New York, N. Y. Scientific and clinical sessions will be given on the days of August 25, 26, 27, 28 and 29. All sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians, as well as to physical therapists who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

* * *

The American Heart Association has issued a revision of the chart, "Classification of Patients with Diseases of the Heart," which has gained wide acceptance as a guide to functional capacity and therapeutic classification of patients with heart disease. The revised version of the chart is to be incorporated in the new edition of the Association's book, "Nomenclature and Criteria for Diagnosis of the Heart," schedule for publication within the next few months. Prepared by the Criteria Committee of the New York Heart Association, the chart has proved useful in helping physicians determine the amount of activity a patient can tolerate.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE

Psychiatry and Neurology—The Langley Porter Clinic.

Date: August 25 through October 31, 1952, ten weeks, full time.

Fee: Fee for the course is $200.

The course is particularly designed to prepare psychiatrists and neurologists for taking the examinations of the American Board of Psychiatry and Neurology.

Conference on General Surgery—Toland Hall, University of California Hospital.

Date: September 8 through 12, 1952.

Fee: $75.00.

This course is offered for the purpose of stressing the newer concepts, methods of diagnosis, treatment, and techniques in surgery. Instruction will consist of didactic periods, panel discussions and actual *Operative Demonstrations.* Class limited to 50.

Contact: Stacy R. Mettier, M.D., Head Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Postgraduate Courses for Practicing Physicians

Date: September 15-19, 1952.

All-Day Courses: Internal Medicine and Therapeutics; General Surgery and Surgical Anatomy; Cardiology.

Morning Courses: General Medicine; Fractures and Trauma to Soft Tissues; Obstetrics and Gynecology; Dermatology.

Afternoon Courses: Proctology; Pediatrics; Psychiatry; Arthritis and Rheumatic Diseases.

Fee: $75.00 for the combination of morning and afternoon course, or the all-day course (not covered by veterans' educational benefits).

Registration limited: Each physician may register for one morning and one afternoon course or one all-day course.

Contact: Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES SCHOOL OF MEDICINE

Symposium on Hypnosis

Date: June 25, 26, 27, 1952.

Fee: $50.00. Reduced fee $25 for students now working toward graduate degrees in psychology or psychiatry.

Chairman: Roy M. Dorcus, Ph.D.

Guest Lecturers: Milton H. Erickson, formerly Director Psychiatric Research and Training, Wayne County General Hospital; Associate Professor of Psychiatry, Wayne University School of Medicine, Detroit, Michigan; now, practicing Psychiatrist, Phoenix, Arizona.
Frank A. Pattie, Ph.D., Professor Psychology, University of Kentucky.
Frank Kirkner, Ph.D., Chief, Clinical Psychology, Veterans Administration Hospital, Long Beach.

Discussants: Lester F. Beck, Ph.D., James S. L. Jacobs, M.D., Seymour Pollack, M.D., James H. Rankin, M.D., Charles O. Sturdevant, M.D., Eugene Ziskin, M.D.

Contact: Thomas H. Sternberg, M.D., Head of Postgraduate Instruction, Medical Extension University of California, Los Angeles 24, California.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Internal Medicine—Course 830 — Los Angeles County Hospital.

Date: September 15, 1952 through June 1, 1953, full time.

Fee: Fee for the course is $750. Mail check to University of Southern California, School of Medicine, Department of Internal Medicine, Box 158, 1200 North State Street, Los Angeles 33. Course limited to eight students; applications will be accepted until July 15, 1952.

Intensive Review of Internal Medicine

Date: September 15 through September 26, 1952—8:30 a.m. to 12:30 p.m., Monday through Friday.

Fee: $50.00; applications accepted until August 1, 1952.

This course is offered for students preparing to take examination for the American Board of Internal Medicine.

Contact: Donald Petit, M.D., Assistant Professor of Medicine.

INFORMATION

Seventh National Conference on Rural Health

Leaders in health throughout the United States met in Denver, February 27 to March 1, for the seventh National Conference on Rural Health sponsored by the Council of the same name of the American Medical Association. Representatives of farm groups (the American Farm Bureau, the National Grange, the Agricultural Extension Service) and of labor groups, and health educators met with medical leaders in rural areas to discuss formally and informally problems of mutual concern.

An entire day preceding the formal conference was taken up with the discussion of "The Physician as a Citizen." Many ideas, mostly constructive but some critical, were expressed. It appeared, however, that the discussion was mutually profitable. The valuable contribution of the health educator was demonstrated by the description of activities in several rural areas, particularly North Carolina, where the health educator, working with the physician, has done much to improve the general health status. Medical service has likewise been improved as the result of these activities.

A great deal of stress was laid upon the importance of the development of State Rural Health Councils. Several states have advanced to a considerable degree in promoting better health and medical service to areas, purely as the result of the mutual contributions of interested groups. In many areas physicians working with the public health department and the agricultural extension service, have succeeded in bringing order out of chaos for the benefit of all concerned.

It is noteworthy that in all the discussions the consensus of opinion was that progress could and should be made through individual effort starting at the grass roots. Collectivistic effort in the form of governmental intervention and control was universally frowned upon. Farm representatives in particular were vocal in their disavowal of governmental assistance. It was the consensus that no one organization could be held responsible for the success or failure of a program and that only through the combined efforts of all giving personally of their time and money could success be achieved.

The trials and tribulations facing a young general practitioner entering a small rural community were colorfully described by Dr. Kenneth Kaisch of Philip, South Dakota. He described the hurdles to be encountered by a doctor of medicine in a sparsely settled rural community and how success and satisfaction could be gained by the doctor entering into the spirit of the community as a total citizen as well as the dispenser of medical service.

The conference was highlighted and honored by the presence of, as well as the addresses given by, two outstanding United States citizens. Dr. John Cline, president of the American Medical Association, addressed the entire conference, as did Mr. Allan Kline, president of the American Farm Bureau. Their messages were enthusiastically received.

Homage was paid to Dr. Albert C. Yoder in the closing hours of the session. Doctor Yoder was designated the general practitioner of the year during the last meeting of the House of Delegates of the American Medical Association. He is 84 years of age and still practicing medicine in Indiana. It appeared that everyone caught the spirit of this fine gentleman's contribution.

California's representatives included Frank Doughty, M.D., who is a member of the A.M.A.'s Council on Rural Health; Andrew Bone, Director of Direct Services Department of the California Farm Bureau; Carroll Andrews, M.D., of Sonoma, a member of the California Medical Association's Committee on Rural Health; John C. Dement, M.D., San Francisco; Dwight Murray, M.D., Napa, and Henry A. Randel, M.D., Fresno.

HENRY A. RANDEL, M.D., *Chairman,*
C.M.A. Committee on Rural Health.

BOOK REVIEWS

PLASTIC SURGERY OF THE NOSE—Including Reconstruction of War Injuries and of Deformities from Neoplastic, Traumatic, Radiation, Congenital and Other Causes—James Barrett Brown, M.D., Professor of Clinical Surgery, Washington University School of Medicine, St. Louis; Chief Consultant in Plastic Surgery, U. S. Veterans Administration; and Frank McDowell, M.D., Assistant Professor of Clinical Surgery, Washington University School of Medicine, St. Louis. With 379 Illustrations including 48 in color. The C. V. Mosby Company, St. Louis, 1951. 427 pages. $15.

A worthwhile practical clinical book which fulfills the author's hopes that it contain features of interest to those already engaged in rhinoplastic surgery, as well as serve as a useful guide to surgeons, both civilian and military, just beginning this work.

The short introduction and historical note show great restraint. The chapter dealing with the preoperative examination and evaluation of patients for plastic surgery of the nose is concise; yet the subject matter is so well selected and presented that it should be read by not only those who are actively engaged in doing rhinoplastic surgery but by all who have or may have reason to recommend or discuss the problems with this type of patient.

The volume does not present detailed fundamental anatomy of the area. The chapter on preliminary preparations and anaesthesia is so brief and lacking in detail as to be of little real value. The deletion of this material does permit the volume to be of reasonable size and weight and is justifiable on the basis that this knowledge is or should be obtained from the numerous available recognized sources, and experience as part of the surgeon's basic training.

The numerous illustrations showing what can be accomplished by means of rhinoplastic surgery are excellent, both as to selection and reproduction. However, even those for whom the book is intended would appreciate more detail as to how those results were obtained and more information as to how to recognize the many pitfalls which, if not avoided, negate the opportunity to duplicate these most satisfactory results.

* * *

1951 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY (August 1950-June 1951)—Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Gynecology, Cook County Graduate School of Medicine. The Year Book Publishers, Inc., Chicago, 1951.

The worthwhile literature in obstetrics and gynecology published from August 1950 to June 1951 is reviewed by Greenhill in the Year Book for 1951. The editorial comments are even more interesting than in previous editions.

While there have been no outstanding advances in the specialty as reported for last year, the chapter on the newborn is outstanding. The obstetrician, pediatrician and pathologist are attacking the problem of prematurity. The increased interest in neonatal pathology with special emphasis on the hyaline membrane and erythroblastosis will undoubtedly effect a reduction in fetal mortality.

The early diagnosis of, and surgery versus radiation in carcinoma of the cervix continues to be debated and the editorial notes are particularly effective in studying this subject.

The Year Book quiz received with the book is an excellent evaluation of one's familiarity with the current literature. The Year Book continues to be an excellent survey of the obstetrical and gynecological writings, and in such capable hands as the editor, Dr. J. P. Greenhill, it will be a handy reference for the busy practitioner and specialist as well.

THE CHILD IN HEALTH AND DISEASE — Second Edition—A Textbook for Students and Practitioners of Medicine—Clifford G. Grulee, M.D., Rush Professor of Pediatrics, University of Illinois; and R. Cannon Eley, M.D., Assistant Clinical Professor of Pediatrics, Harvard University Medical School. The Williams and Wilkins Company, Baltimore, 1952. 1255 pages. $15.00.

The appearance of a second edition of Grulee and Eley's text only four years after the first bespeaks its popularity and practical usefulness. The list of contributors is impressive in numbers (87) and individual competence. New chapters have been added on adoption, medical supervision of summer camps, cardiovascular surgery (by Potts of Chicago) and viral hepatitis, and the sections on erythroblastosis fetalis and pancreatic fibrosis have been expanded by the addition of much new material into separate chapters. The volume contains a good deal of material not so well or so completely covered, and some that is not found at all in the other American texts. It should be a useful addition to the libraries of pediatricians and general practitioners and valuable to medical students for reference purposes.

There is an excellent index covering 47 pages. Bibliographic references follow the individual sections. There are many illustrations, some in color, most of which are of good quality.

* * *

THE 1951 YEAR BOOK OF DRUG THERAPY—Edited by Harry Beckman, M.D., Director, Departments of Pharmacology, Marquette University Schools of Medicine and Dentistry. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago 11, 1951. 502 pages. $5.00.

The Yearbook of Drug Therapy may be recommended once again. It is an excellent means of getting an unbiased evaluation of the work of the past year in the pharmacological field.

Along with its obvious and repeated virtues it has a major defect which should be mentioned: One accepts an arbitrary chronological delimitation for the abstracts in a year book. This means that certain relevant articles must necessarily be omitted because they fall outside the period covered. This is regrettable—but understandable. However, when such articles fall well within the prescribed time limit, there is no excuse for leaving them out. To illustrate: On page 269 the use of aureomycin in hepatic insufficiency is given a big boost by the abstract of Goldbloom and Steigmann's report in *Gastroenterology* for May 1951. But this is the only abstract on this subject despite the fact that other articles have appeared in the literature (notably the most extensive researches of Lepper and his colleagues in the *Archives of Internal Medicine* for July 1951) well within the time limits set for this volume.

* * *

TEXTBOOK ON REFRACTION—Edwin Forbes Tait, M.D., Ph.D., Associate Professor of Ophthalmology, Temple University School of Medicine. Illustrated. W. B. Saunders Company, Philadelphia, 1951. 418 pages. $8.00.

Doctor Tait in his preface states his book is primarily for a student group studying ophthalmology.

Books on refraction compared to books on other phases of ophthalmology are rare. Since it is obvious that refraction is the major part of an ophthalmologist's work more study should be made of refraction and its many ramifications.

This book of 28 chapters and 394 pages covers the subject concisely. It brings us up to date in refraction. It furthermore has a brief discussion of fusional defects and the use of orthoptics.

THE NEW WAY TO BETTER HEARING—Through Hearing Reeducation — Victor L. Browd, M.D., Adjunct Professor of Otolaryngology, New York Polyclinic School and Hospital. Crown Publishers, 419 Fourth Avenue, New York, 1951. 226 pages. $3.00.

There are several things about this book which make an unprejudiced review difficult: (1) an item on the jacket states, "For the first time, in *The New Way to Better Hearing*, Dr. Browd makes available to the public at large, as well as to his colleagues, his amazingly successful method of hearing improvement"; (2) a letter from the publisher states, "...every patient who has submitted to Dr. Browd's treatment has proven it to be successful"; (3) the publisher's preface states, "Although, as Dr. Browd points out, professional attention is advisable, particularly in the beginning, it is not indispensable in most cases and the patient, with the aid of this book and a friend or relative, can achieve better hearing within a comparatively short time"; (4) the case reports have been written in a form to suggest testimonials. All this, together with the quality of the paper, which is like that used in the pulp magazines of the "popular" variety, leaves little doubt that the presentation had been planned for "mass appeal."

This book, with such a title, should qualify as a best seller. What hard-of-hearing person wouldn't risk three dollars for the newest in help for his affliction?

Is hearing reeducation as described in this book new? The basic principle is concerned with the use of the remaining hearing power the patient still possesses and with reeducating the individual to interpret meaningless sounds into meaningful sounds. This principle is not new; it has been advocated by many others, notably M. A. Goldstein, who published in 1939, "The Acoustic Method for Training of the Deaf and Hard-of-Hearing Child." Browd's claim to distinction is that he advocates hearing reeducation without a hearing aid and "because it (his system) is an improvement over other systems, and its most important and effective features are original and not to be found in other programs for improving the hearing, the advances are so radical, the advantages and benefits so great that it outmodes and replaces current programs wherever it is used. The greatest single advance is freeing of unused hearing power so that no hard-of-hearing person is excluded from the possibility of better hearing." Browd, of course, is entitled to his own opinion.

There are sentences in the book which state that, in certain instances, a hearing aid is necessary for hearing reeducation in some individuals, but the over-all impression is that these patients are in the minority and that most can be reeducated without the use of a hearing aid. In a previous publication (*Archives of Otolaryngology*, May 1949), however, Browd states, "As a rule, those with more than a 40-decibel average loss between the frequencies of 128 and 8192 cycles per second in the better ear require both hearing aid and hearing reeducation, but some patients with a loss as great as 50 decibels can be brought to a satisfactory level without a hearing aid."

The problem of tinnitus, according to this book, is easily solved. It is said that the cause of the patient's head or ear noises is the impaired hearing itself and that an improvement in hearing will abolish all these noises.

Disregarding its embellishments and extravagant claims, this book has much to be said in its favor. It outlines in detail, step by step, the management of an individual, in a variety of situations, in the process of hearing reeducation. There are several chapters of appendices which include speech-sound interpretation tests, a hearing disability questionnaire, sample demonstrations, hearing reeducation schedules, and speech-sound lists for foreign patients.

It is regrettable that this book has been written for mass appeal. It could have been, with dignity, a contribution.

HORMONES AND BODY WATER — Robert Gaunt, Ph.D., and James H. Birnie, Ph.D., Department of Zoology, Syracuse University, Charles C. Thomas, Publisher, Springfield, Illinois, 1951. 57 pages. $2.25.

In this small monograph are reviewed very briefly the actions of various hormones in regulating the water content of the body, and related problems are also mentioned. The authors, experts in this field, have previously published much of the material in detail elsewhere.

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BODY, MIND AND SUGAR—E. M. Abrahamson, M.D., and A. W. Pezet, Henry Holt and Company, New York, 1951. 206 pages. $2.95.

Dr. Abrahamson diagnosed hypoglycemia in Mr. Pezet and then repeated the performance by making the same diagnosis on Mrs. Pezet. Mr. Pezet, a writer by profession, felt this unique situation demanded a book, and so *Body, Mind and Sugar* was written.

If the authors had confined their observations to the hypoglycemic Pezets and a limited number of similarly afflicted persons this reviewer would be more tolerant of their efforts. But when they make the statement that 10,000,000 to 30,000,000 citizens of the United States have hypoglycemia and that the condition is the cause of heart arrhythmias, peptic ulcer, asthma, alcoholism, neuroses, and many other conditions, then one is justified in questioning the validity of their remarks. When in addition they make the statement that the bulk of the medical profession is not interested in the condition, then it seems only just that they actively defend their thesis.

Dr. Abrahamson's stand may be stated briefly as follows: Many people suffering from chronic fatigue, ulcer, asthma, etc., have what he considers an abnormal six hour glucose tolerance test. He defines abnormality by saying that the blood sugar following the ingestion of 100 grams glucose falls below 70 mg. per 100 cc. He also makes the statement that the normal non-fasting blood sugar is around 140 mg. per 100 cc. Now it is certain that most normal people run blood sugar considerably below 140 mg. per 100 cc., as we have all found repeatedly when doing postprandial blood sugar determinations. It is also extremely likely that many normal people will have blood sugar as low as 70 mg. per 100 cc. some time after the ingestion of 100 grams glucose. Unfortunately, the authors do not present any details as to the results on control cases. Furthermore, their conclusions do not agree with those of many workers in this field, particularly those interested in psychiatry.

In several places in the book the authors have been guilty of bad taste in implying that the medical profession has been disinterested in the subject because of its lack of popular appeal. They also bring up the old melodramatic story of the heroic intern saving the child's life by forcibly pushing aside the older, more experienced doctor. After all, plenty of us who are interested in hyperinsulinism cannot agree with the authors, and it seems unfair to damn doctors unduly in a book designed for the lay reader.

Finally, however, it must be admitted that their book does raise many interesting points regarding the effects of carbohydrate metabolism on the human being. This reviewer is sympathetic to the idea that eating meals high in carbohydrates, coffee-drinking, emotional strain, etc., do induce a state of fatigue. He is not willing to concede that the answer to the problem may be found merely by determining blood sugar levels. And to a practical physician, one question at once comes to mind: Why not merely try the effect of the high protein diet on the individual patient instead of doing six-hour glucose tolerance tests whose significance is at best doubtful?

CALLANDER'S SURGICAL ANATOMY—Barry J. Anson, M.A., Ph.D. (Med. Sc.), Professor of Anatomy, Northwestern University Medical School; and Walter G. Maddock, M.S., M.D., F.A.C.S., Elcock Professor of Surgery, Northwestern University Medical School. W. B. Saunders Company, Philadelphia, 1952. 1,074 pages, 929 illustrations. $14.00.

To those familiar with the first two editions of Callander's Anatomy little need be said regarding the value of this third edition. In the reviewer's opinion Callander's Anatomy is the leader in the field of surgical anatomy because it was written by a surgeon for surgeons and its approach to all regions of the body is the approach of the surgeon.

The publishers, W. B. Saunders Company, were very wise in their choice of the Anson-Maddock team to make the revision. Wherever illustrations from "The Atlas of Human Anatomy" could contribute to Callander's Surgical Anatomy they were used. Judgment in the use of these added illustrations and a number of quite new illustrations to go with the revised text have blended to make an excellent result in the third edition of Callander's Anatomy. The value of the work has been very much enhanced by the latest edition and in this reviewer's opinion the volume has become a "must" in the surgeon's library.

* * *

CLINICAL HEMATOLOGY—Maxwell M. Wintrobe, M.D., Ph.D., Professor of Medicine and Director, Laboratory for the Study of Hereditary and Metabolic Disorders, University of Utah, College of Medicine, Salt Lake City. Third Edition, thoroughly revised. 220 illustrations and 17 plates, 13 in color. Lea & Febiger, Philadelphia, 1951. 1,048 pages. $12.50.

The many recent advances in hematology have necessitated a new edition of this book, and Dr. Wintrobe again has done an admirable job. Unlike some other books which are obsolete before they appear, the text and bibliography is complete to the time of publication.

The newer therapeutic agents are included; among them are folic acid, vitamin B_{12}, the nitrogen mustards, the folic acid antagonists—ACTH and cortisone. The section on immunity mechanisms in hemolytic anemia is somewhat brief. The discussion of blood coagulation is as complete as is possible at this time. Several new and excellent illustrations from other recent publications have been included.

Despite the increasing size of the book (now over 1,000 pages), it is still very readable. With the complete bibliography and careful indexing, it is an excellent reference source. This book continues to be the outstanding text in the field of hematology and one of the classic texts in the field of medicine.

* * *

BIOLOGICAL ANTAGONISM—The Theory of Biological Relativity—Gustav J. Martin, Sc.D., Research Director, the National Drug Company, Philadelphia. The Blakiston Company, Philadelphia, 1951. 516 pages. $8.50.

This book covers very comprehensively the general phenomenon of the antagonism between various suhstauces in biological systems, especially those instances of displacement reactions in which a substance interferes with a biologically important substance by reason of its structural similarity. The treatment is very clearly organized and is arranged in a logical manner that will facilitate the study of the subject by those who are not completely acquainted with the field; yet it is so complete that it will adequately serve as a source book for all of the important work done on this subject. There are 1900 references to all of the major papers and it brings the entire subject up to date in a most illuminating cross-section of our present knowledge.

The subject is introduced by a discussion of enzymatic inhibition, since this is basic to the whole theory, and then proceeds to pharmacological examples, including the drugs altering the function of the autonomic nervous system, the antihistamines, the depressants of the central nervous system and others. This naturally leads into a comprehensive discussion of the sulfonamides and their relationship to p-aminobenzoic acid and folic acid. Since many of our modern views have been obtained from investigations of these drugs, which were responsible for the rehirth of the principle of biological antagonism in 1940, it is particularly valuable to have this work set out in a complete and yet concise manner. There follow several chapters taking up antagonists to the various amino acids and this is climaxed by a most interesting section on the antagonisms between proteins, including immunological phenomena, antibodies to enzymes and hormones, and interference among viruses. This is especially welcome, since I know of no other place where these data have been accumulated to contribute to the general theory. The next seven chapters deal with metabolite analogues or antagonists to the various growth factors and vitamins involved in cell function from the most simple bacteria to the higher multicellular animals, giving a complete summary of all compounds investigated with their effects upon various cells and enzyme systems. Hormone antagonisms are then discussed, including plant hormones, sex hormones and thyroxine. A brief review is given of ion antagonisms in microorganisms and enzyme systems, including the phenomenon of chelation, and this is followed by a chapter devoted to miscellaneous antagonisms such as are involved in the porphyrins, the basic proteins, dyes, fatty acids and substances that interfere with the sulfhydryl groups of enzymes. A short chapter on bacterial adaptation and the development of drug resistance is included since it represents a mechanism by which the cell compensates for interference within its metabolic pattern. A final chapter gives the theory of biological relativity in general terms.

The clinical and therapeutic aspects have not been neglected; thus, for example, there are discussions of the therapy of leukemias and tumors with folic acid derivatives, the chemotherapy of various infections and the possibilities inherent in these methods of further progress in such fields as thyroid suppression. I do not hesitate to state that this is the most thorough and best organized work that we have on all aspects of this subject—it will perhaps remain such for some time—and I believe that it will not only be of great value to investigators but also to biologists and clinicians who realize more and more that such principles must underlie their basic understanding of vital processes and the factors modifying them.

* * *

A COURSE IN PRACTICAL THERAPEUTICS—Second Edition—Martin Emil Rehfuss, M.D., F.A.C.P., Professor of Clinical Medicine and Sutherland M. Prevost Lecturer in Therapeutics, The Jefferson Medical College; and Alison Howe Price, A.B., M.D., Associate Professor of Medicine, The Jefferson Medical College. The Williams and Wilkins Company, Baltimore, 1951. 938 pages. $15.00.

The first edition of this textbook, published in 1948, was given an enthusiastic recommendation in CALIFORNIA MEDICINE (70:83, Jan. 1949). The second edition, brought out some three years later, contains new material which brings it up to date for current consultation. Again the volume merits hearty praise. There is no other in the field of medical therapeutics which is more practical or usable. It combines incisiveness along with remarkable inclusiveness—making it an excellent reference. And it details the most recent information on scientific treatment while retaining some of the time-tested remedies which date back to the 19th century, a profitable example of "the old along with the new."

It belongs on the shelf of the internist and the general practitioner—and will prove most useful to medical students.

California MEDICINE

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Physicians in Politics — as Good Citizens

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THIS is an election year of high political voltage in California and in the nation, and most doctors I talk to are taking their politics seriously. I think that's fine, because doctors, like all good Americans, should first of all be good citizens.

Some people have criticized doctors because, in the course of their nationwide battle against socialized medicine, they have descended from their ivory towers and entered the world of public affairs. The critics who call for the doctors to return to their towers, of course, have been on the losing side of the battle.

I think doctors should not withdraw from the field of active citizenship, and I believe they will not. One of the wonderful things that happened to doctors in the course of their fight has been the realization that the fight really is just a skirmish in the over-all fight to uphold basic American principles above the muddy flood waters of socialism, communism and fascism that have engulfed so much of the world.

Doctors, I believe, owe a great debt to the many thousands of individuals, community groups and national organizations that allied themselves with medicine's cause—to legislators and laymen, to leaders of other professions, to those businessmen and labor leaders who spoke out to defend a free profession from the threat of political domination. Individual doctors who concern themselves with politics are partially repaying that debt, for they are carrying the fight for freedom beyond the field of narrow self-interest.

The physician is trained always to observe and respect the law of cause and effect. He knows that an untended cut will result in an infection. He knows that if a cancer is not removed, the patient will die. Most of us, in dealing with the problems of our daily lives, pay due attention to that law. The farmer knows that if he plants barley, he can't expect to reap wheat. He can't expect to harvest oranges from his peach trees.

Yet the social planners of our era—the starry-eyed promoters of economic Utopia—insist on ignoring and breaking the law of cause and effect. They would have us believe that if we plant the seeds of tyranny, we will reap wealth; that if we plant the seeds of socialism, we will have liberty.

NATURE'S EMPHASIS ON THE INDIVIDUAL

Let's examine briefly the economics of the world we live in from the viewpoint of the biologist. The biologist, whose job it is to study living organisms, never ignores the law of cause and effect. He deals with things as they are—not as he might imagine or even prefer them to be. Nature, the biologist knows, has one basic, changeless principle. It is the principle of individual responsibility: *individual reward for individual merit and individual penalty for individual failure.*

Nature's unvarying emphasis is upon the individual member of a species. Her sole use of group action is to afford the individual an opportunity for development and to protect him against attack by other species or groups, or by other individuals in the same group. The whole evolutionary process has been directed toward improvement in form and function of the individual. In all of the 800 million years of evolution, *during which Nature commenced with an ameba and achieved a Mozart,* she never varied from the underlying principle of individual responsibility. Our social planners—blithely flying in the face of Nature—exalt the glory and power of the group over the worth and dignity of the individ-

Address of the President of the California Medical Association upon induction to office at the meeting of the House of Delegates, Los Angeles, April 27, 1952.

ual. Our basic American principles, the planners tell us, are old-fashioned—even "corny." Yet the reason why the American system has been so enormously successful—why perhaps for the first time in recorded history one generation after another has grown to maturity and given way to the next without knowing what it is to starve—the reason is that our system was founded with due regard for Nature's laws. The Declaration of Independence asserts as God-given rights, not as government-endowed privileges, the rights to life, liberty and the pursuit of happiness—not happiness, mind you, but the individual pursuit of happiness. That cornerstone of our American way of life reaffirms Nature's deep regard for the importance and dignity of the individual, rather than the group, or the state.

On that foundation, America grew to moral and material greatness, under a system of free enterprise—a system that permitted men to buy or sell, to work for themselves or others, to compete or cooperate according to their preference, so long as they proceeded by voluntary agreement and did not resort to violence or fraud.

That economic system, which has produced such a wealth of goods and inventions and raised man's standard of living beyond his wildest dreams, ideally conforms to Nature's laws. We have only to dip into our history books and glance at the present world around us to know that beyond any question that system has accomplished the greatest good for the greatest number of any system ever devised by any society in the history of the world.

Yet because under this system everything is not always perfect for every person at all times, the social planners—both the evil-intentioned schemers and the well-meaning do-gooders—urge us to abandon it in favor of systems based on group action, or collectivism.

COLLECTIVISM DEFIES NATURE

Nazism, socialism, fascism, communism — all forms of collectivism, rest on the basic premise that the individual is of little or no value and that the group or the state is of paramount importance. Karl Marx's dictum, "*From each according to his ability, unto each according to his need,*" typifies this thinking. This philosophy and its practical application in group action permit the individual to diffuse, deny, and evade his personal responsibility by merging it with that of the group or state. Such avoidance of personal responsibility exists nowhere in Nature's plan and is therefore a direct violation of her fundamental rules. The biologist would expect such conduct in human society to fail. And it has failed, time and time again.

There are many spectacular examples of failure in ancient times:

In 2285 B.C., Hammurabi, the Babylonian, imposed upon his people the most elaborate set of codes covering every conceivable economic and social activity. The experiment was short-lived. It did not produce a stable society, nor did it encourage production and distribution.

The Roman Emperor Diocletian, in 301 A.D., put the government into every phase of the citizen's existence and thereby so weakened the Roman Empire that it fell a ready prey to invasion just a few generations later.

In 1058 A.D., in China, the emperor of the Sung Dynasty was faced with economic and political difficulties. There were present all the symptoms of a maladjusted economy which inspire our modern intelligentsia to reckless surgery on the body politic. There were over-production and under-consumption, improper distribution of wealth, privilege in high places, economic royalists, and *two-thirds* of the nation were *ill-fed, ill-clothed* and *ill-housed.* The emperor called in the number-one brain truster, a man named Wang-an-shih, who put into effect sweeping New Deal reforms. Prices, wages and hours were fixed, crop quotas were established, excess crops and animals were destroyed, the ever-normal granary was established, and the currency was devalued. Naturally, the physicians were placed under government control. *Do these tactics sound familiar?* And the results: The experiment lasted for about ten years, at the end of which time Wang-an-shih was forced to flee the country to save his life.

In modern America, particularly in the last century, numerous experimental communities were established along basically communistic lines. Some of the more outstanding were Brook Farm outside Boston, the New Harmony Colony at New Harmony, Indiana, and the Oneida Perfectionists at Oneida, New York. These colonies all pooled resources and assets and followed the communist doctrine of "*from each according to his ability; unto each according to his need.*" All of them, after a short trial, either failed or altered their organization in such a way as to reflect individual responsibility and encourage individual initiative. During the heyday of the New Deal, the economic planners killed 6,250,000 little pigs, 875,000 cows and several hundred thousand brood sows, in addition to ploughing up millions of acres of corn, wheat and other crops, and destroying crops already produced. The quaint notion behind that program was that by destroying part of that which we have and making it difficult or impossible to produce more, we would all have a greater abundance of goods and services to enjoy. Government intervention stems from the fallacy that high prices are an indication of prosperity and well-being, when as a matter of fact, they merely indicate a lowered availability of the products involved, and therefore a lower living scale for all of us.

The social planner believes that the state should relieve the individual of responsibility in almost every phase of human activity. The biologist, who has made a study of Nature, believes just the opposite. He believes that the founders of this republic were on sound ground when they sought to limit the powers of government. Thomas Jefferson, in his first inaugural address, said, "Restrain men from injuring one another but leave them otherwise free

to follow their own pursuits of industry and employment."

The philosopher Herbert Spencer taught that the legitimate functions of government are four in number: one, enforcement of the fulfilment of contract; two, punishment of fraud; three, provision of justice; and, four, protection against foreign invasion.

Our social planners have brought us a long way from that concept of government today. In England, the Fabian Society planned from its beginning in 1883 to bring socialism to the British nation. They succeeded. By deliberate plan, in which the word socialism was never mentioned, the people were sold socialism piecemeal. In our own country, the social planners hotly deny their collectivist intent, yet they have brought us a long way down the socialist road.

Twenty-one per cent of our electric power is generated by public agencies. We have a managed, inconvertible currency; it is illegal for the citizen to have gold. Incentive has been dulled by confiscatory income taxes. Hard work and thrift are no longer enough; the person who would become independent today must search for so-called tax loopholes or acquire "influence" in high places.

Our press has been subjected to censorship by government bureaus. Our Federal Communications Commission rigidly controls much of the spoken word. Just recently, it solemnly proclaimed that only one type of color television will be permitted. Imagine what kind of cars we would be driving today if in 1902 some government bureau had decreed that Henry Ford's planetary transmission would be the only type allowed to develop.

Perhaps most serious of all, a system of so-called progressive education has gained acceptance in many of our schools which, in utter disregard for Nature's laws, exalts group action, abhors competition and discourages individual responsibility. Is it any wonder that after twelve years of indoctrination under such a system, youngsters, although they may never have been taught socialism as such, are ready to embrace the socialist doctrine of "from each according to his ability, unto each according to his need"?

The time is late for a return to the basic principles upon which this nation was founded and grew to greatness. But it's not too late—and as long as it is not too late, doctors belong in politics.

Doctors belong in politics because our own problem is only part of a bigger, far more important, general problem. We must take an ever-active interest in politics, not as doctors, but as informed citizens.

Fortunately, most of us Americans have not lost our instinctive feeling for freedom; our deep-rooted belief that we count for something as individuals, not just as members of our union, lodge or medical society. Our children are not yet ready to join Hitler-type youth movements.

Most of us, I believe, are gradually waking up to the realization that we have strayed from the right path, and must find our way back to it. The first step in finding our way is for all of us—doctors, farmers, plumbers, lawyers, electricians—good citizens all—to concern ourselves with politics.

It was never more important. Our future, our children's future, the fate of our country depends on it.

1401 South Hope Street.

Mechanism of Syncope and Action of Drugs in Complete Heart Block

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SUMMARY

The syncopal attacks of complete heart block may be due either to ventricular standstill or to ventricular acceleration including fibrillation. As treatment may be harmful unless the underlying mechanism in each case is determined, it is important to apply the available methods for differentiation.

Epinephrine and certain related compounds (sympathomimetic amines) are the only effective substances in the therapy of ventricular arrest.

Isopropyl nor-epinephrine is a most potent drug in the prevention and treatment of ventricular arrest and has the advantage that it does not dispose to fibrillation.

Quinidine is unreliable and probably hazardous in the control of ventricular fibrillation in heart block as it appears to precipitate this arrhythmia.

Preliminary observations indicate that ectopic ventricular rhythms are also induced by procaine amide in complete heart block.

Isuprel® may be of value in the therapy of ventricular acceleration, by preventing the ventricular arrest which frequently follows the initial acceleration.

THE chief therapeutic problem in complete heart block is the prevention of syncopal attacks. The syndrome of syncope with slow pulse was described in 1827 by Robert Adams[1] of Dublin; the patient, whose pulse rate was 30 per minute, had dyspnea, cough and attacks of fainting. In the same year William Burnett[2] reported a similar case and called attention to the fact that Morgagni had described two patients with epilepsy and slow pulse in 1761. However, general attention was not attracted to this condition until William Stokes[23] published four cases in 1846. Since that time, syncopal attacks associated with heart block have been known as the Adams-Stokes syndrome. For many years, it was generally accepted that the mechanism underlying the Adams-Stokes syndrome was asystole of the ventricles. The cardiac arrest might occur (a) during the transition from normal rhythm to complete block or (b) in the midst of complete block. The Adams-Stokes seizures have been defined as attacks which "occur in patients with auriculoventricular block, when the ventricular diastole is sufficiently prolonged to result in a severe grade of cerebral ischemia."[17]

In 1941 Parkinson, Papp and Evans,[18] in an excellent analysis of 64 cases in which electrocardiograms were made during syncopal attacks of heart block, emphasized that ventricular asystole was not the only mechanism. Of the 64 patients, 18 had ventricular tachycardia and fibrillation followed by ventricular standstill, 13 had ventricular tachycardia and fibrillation without standstill and 33 had ventricular standstill alone. These observers defined the Adams-Stokes attack as "that condition which is seen in patients with complete heart block who suffer from recurrent attacks of loss of consciousness due to ventricular standstill, ventricular tachycardia, ventricular fibrillation or a combination of these." Although the report of Parkinson and his associates emphasized the frequency of ventricular acceleration as the basis of the Adams-Stokes attack, earlier observers[3, 4, 5, 6, 8, 9] had reported this mechanism in heart block. Schwartz and co-workers[19, 20, 21] in 1932 and in a series of later papers carried out a most detailed analysis of graphic records before, during, and after a seizure.

It is apparent that rational therapy directed at the prevention of the Adams-Stokes attack necessitates a recognition of the underlying cardiac mechanism. An electrocardiogram taken during a seizure will (Figures 1 and 3a) demonstrate the mechanism clearly. Since it is not always possible to obtain a record during an attack, other methods may be required and certain observations will lead to suspicion of ventricular acceleration or fibrillation. In ventricular asystole, the transition from the basic rhythm to the cessation of cardiac activity is usually abrupt (Figure 1). However, when the mechanism is ventricular fibrillation, it has been observed by Schwartz and co-workers[19, 20, 21] that, preceding the seizures, there is consistently a regular or irregular acceleration of the heart. Recently Schwartz and co-workers[21] stated that "transient ventricular fibrillation in man has never been observed to be ushered in abruptly without such premonitory signs." These premonitory disturbances of rhythm may be suspected in several ways. First, the patient himself may be aware of an increase in heart rate preceding a syncopal attack. Second, when attacks

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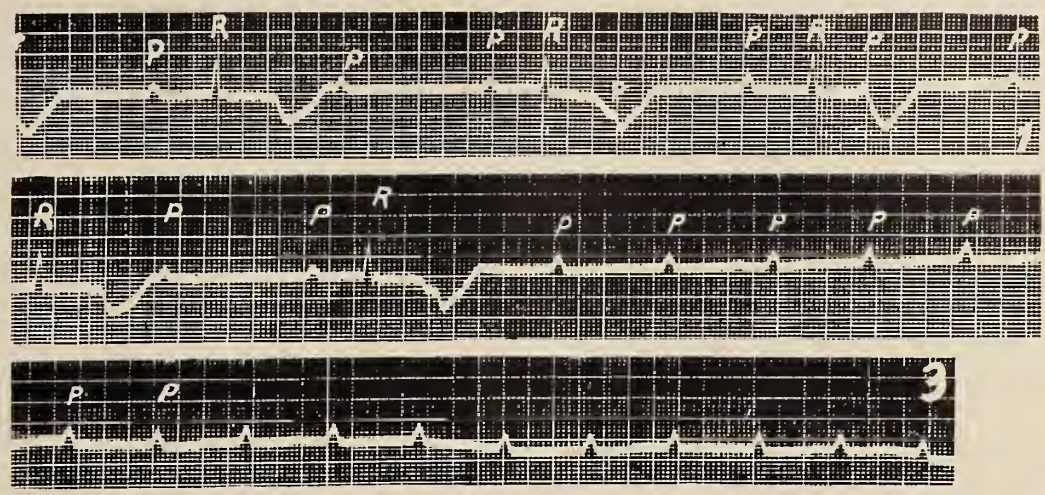

Figure 1.—Upper strip shows complete heart block, ventricular rate 23 beats per minute. Second strip shows the onset of ventricular standstill. After the first two ventricular complexes, the record shows only auricular waves. The lower strip is a continuation of the record.

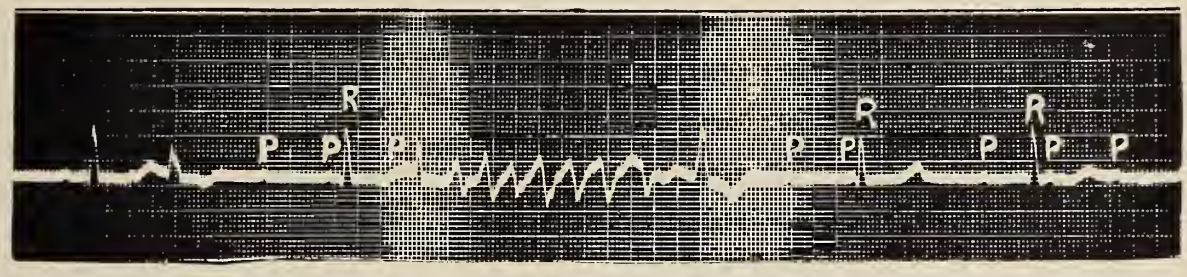

Figure 2.—Complete heart block, showing the basic rhythm interrupted by a series of ventricular oscillations.

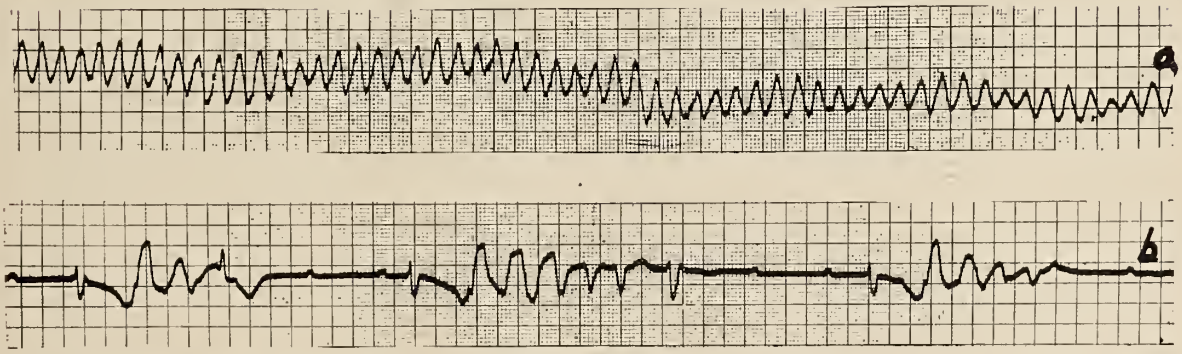

Figure 3.—Strip *A*, taken during a syncopal attack, shows ventricular fibrillation. Strip *B*, taken between attacks, shows complete heart block and the basic pattern alternating with short runs of aberrant ventricular oscillations.

are frequent, an observant nurse may note acceleration before the pulse disappears completely and syncope occurs. Third, a physician, on auscultation of the heart between attacks, may hear frequent interruptions of the slow basic rhythm by short runs of rapid and weak beats, most of which cannot be felt at the wrist. The audibility of these contractions becomes progressively weaker after the basic ventricular beat. During these arrhythmic periods, pallor of the face may be noted and the patient may complain of a weak or sinking sensation. Fourth, it is frequently possible in a routine electrocardiogram, especially if long strips are taken, to observe the basic pattern interrupted by recurrent runs of ventricular oscillations (Figures 2 and 3b). A fifth point which strongly suggests ventricular acceleration and fibrillation as the mechanism is the ineffectiveness of epinephrine and related compounds, which actually may prolong and increase the frequency of attacks.

Certain of these features are illustrated in the case of a patient with heart block observed in 1933. Ventricular fibrillation was suspected although an electrocardiogram was not obtained during an attack.

CASE REPORT

The patient was a 76-year-old obese, dyspneic woman who complained of fainting spells. Syncopal attacks started on December 22. She had two attacks on that day and on the following. On December 23 an attack observed by a physician consisted of jerking of the extremities and a short period of unconsciousness during which the pulse was absent. Upon examination, the blood pressure was noted to be 230 mm. of mercury systolic and 60 mm. diastolic. The pulse was irregular and the rate 40 beats per minute. Some pulmonary congestion was present. An electrocardiogram indicated complete heart block. During the examination, the patient suddenly gasped for breath, the eyes became fixed and she became unconscious. The pulse and heart sounds were absent. After the attack, when the patient was conscious, the pulse rate was 48 and there were coupled beats. Periodically, on auscultation of the heart, this rhythm was interrupted by a series of rapid, weak beats, which could not be palpated at the wrist. The patient continued to have three or four attacks, lasting up to four or five minutes, a day. Barium chloride given orally had no influence on the attacks, and they persisted after the subcutaneous administration of epinephrine although the pulse rate rose to 56 per minute. Upon inspection of the routine electrocardiogram, occasional series of aberrant ventricular oscillations (Figure 2) were noted. A diagnosis of complete heart block with syncope due to ventricular fibrillation was made. Quinidine sulfate was given orally in doses of 300 mg. three times a day. The patient continued to have from one to three attacks of syncope a day. The pulse rate was usually 40, but immediately after one mild attack an irregular pulse with a rate of 54 beats a minute was noted. On the seventh day of hospitalization the patient died after prolonged syncope.

In that case several features suggested ventricular fibrillation as the mechanism of the syncopal attacks. On auscultation of the heart, the normal rhythm was periodically interrupted by a series of rapid, weak beats which could not be palpated at the wrist. A relatively rapid irregular rate was noted immediately after one of the seizures—a phenomenon described by Schwartz and co-workers.[19, 20, 21] There was a continuance of the attacks after the administration of epinephrine despite a definite increase in the ventricular rate. The presence of irregular aberrant ventricular oscillations in the electrocardiogram could be considered as almost conclusive evidence that longer periods of this rhythm were present during the syncopal seizures.

In the following case, the attacks were so frequent that it was possible to make many records during the seizures. In all of them ventricular fibrillation was noted. Even without those tracings, however, the diagnosis would have been strongly suspected because of the presence of short runs of ventricular oscillations in the electrocardiograms made between the attacks.

CASE REPORT

The patient, a 78-year-old woman, entered the hospital with a history of repeated syncopal attacks for one month. The blood pressure was 220 mm. of mercury systolic and 70 mm. diastolic. The heart was moderately enlarged and the pulse rate was 40 per minute. In an electrocardiogram, complete heart block was noted. During a period of five days the patient had approximately 200 syncopal attacks, varying from 15 seconds to several minutes in duration. Electrocardiograms made during the attacks showed ventricular fibrillation (Figure 3a). In parts of many tracings made between seizures, complete heart block with a basic ventricular pacemaker from a single focus, was noted. In many portions, this pattern was interrupted by short runs of aberrant ventricular oscillations (Figure 3b).

TABLE 1.—*Effect of Pressure on the Carotid Sinus on the Auricular and the Ventricular Rate in Complete Heart Block*

		After Pressure on the Carotid Sinus	
Auricular Rate	Ventricular Rate	Auricular Rate	Ventricular Rate
80	38	32	38
88	30	45	30
118	25	84	25
100	34	76	34
64	33	33	33
65	29	44	29

As was mentioned previously, ventricular activity of the kind noted in this case may be considered a prefibrillation mechanism and it indicates that ventricular fibrillation is the basis for the syncope.

INFLUENCE OF THE VAGUS NERVE IN COMPLETE HEART BLOCK

Increased activity of the vagus nerve has been considered a possible basis for the critical slowing of the ventricular rate or for the asystole of heart block. If this were the case, the administration of atropine could prevent the inhibition of the ventricles. However, this drug has not been found to be effective in the prevention of syncopal attacks. This is probably due to the fact that there is little or no vagal innervation to the ventricular pacemaker. The absence of a vagal effect on the ventricular pacemaker is indicated by the observation in which carotid sinus pressure was applied in six patients with complete heart block. The effect of this reflex vagus stimulation was observed on the auricular and ventricular rates. There was a reduction of 50 per cent or more in the auricular rate in each patient while the ventricular rate was unaffected (Table 1).

ACTION OF DRUGS THAT STIMULATE THE RHYTHMIC FUNCTION OF THE VENTRICLES

The observations of Danelopolu and Danulescu (1915) on the beneficial action of epinephrine in heart block have been confirmed in many subsequent reports. However, favorable effects have been ascribed from time to time to other unrelated compounds such as nikethamide (Coramine®), Metrazol,® desiccated thyroid and barium chloride. The ventricular standstill in heart block is due to a temporary failure of ventricular automaticity so that no pacemaker is functioning. The effectiveness of a drug in the therapy and prevention of ventricular standstill depends on its ability to increase the rhythmicity or pacemaking property of the ventricles. In previous studies[14, 15] it was concluded that epinephrine and related compounds, sympathomimetic amines, are the only substances which stimulate

this property of the heart. Of a group of these substances studied, epinephrine was the most active in the prevention of cardiac standstill. Two other compounds, ephedrine and Paredrine,® were of interest because they are effective on oral administration. The oral route is desirable in patients with complete heart block with infrequent syncopal attacks, where self-medication for the prevention of attacks is indicated. Paredrine was found to be more active than ephedrine. In six patients with heart block, 100 to 150 mg. of ephedrine sulfate was required to increase the ventricular rate. A similar increase in rate was obtained by giving 60 to 80 mg. of paredrine hydrobromide.

Recently a new epinephrine-like compound, isopropyl nor-epinephrine (Isuprel®) was introduced for the treatment of bronchial asthma.[10] This drug differs chemically from epinephrine in that an isopropyl group on the terminal nitrogen of the side-chain replaces the methyl group of epinephrine. The chief difference in its action is that the pressor effect of other sympathomimetic drugs is either absent or minimal. In a previous study it was noted that Isuprel was very potent in the prevention of cardiac standstill which can be induced in man by pressure on the carotid sinus.[16]

The effect of this drug in heart block was studied by three routes of administration—intravenous, subcutaneous and sublingual.

Intravenous administration. Isuprel 0.02 mg. was injected intravenously in eight patients with heart block and the effects compared with the reactions following the intravenous administration of 0.03 mg. of epinephrine. The procedure was as follows: a control electrocardiogram was made and three blood pressure readings recorded. The drug was then injected and a continuous electrocardiogram made. The blood pressure was recorded 30 seconds after the injection and thereafter at one-minute intervals.

After both drugs, the ventricular rate rose promptly and remained elevated for from seven to fifteen minutes. Following the intravenous dose of 0.03 mg. of epinephrine, the average increase in ventricular rate was 30 beats per minute. The minimum increase was 20 and the maximum 47 beats per minute. Following the injection of 0.02 mg. of Isuprel the average increase in ventricular rate was 22 beats per minute. The range of increase was from 10 to 39 beats per minute. Considering the smaller dose of Isuprel used, the response of the ventricular rate was approximately the same following both drugs. Following the administration of epinephrine, there was a sharp and pronounced rise in the systolic pressure. The diastolic pressure increased a little. After the injection of Isuprel, the systolic pressure rose slightly to moderately in two patients and was unchanged or depressed in six patients. The diastolic pressure was depressed in six and unchanged in two patients.

Subcutaneous administration. The response of the ventricular rate to a subcutaneous injection of epinephrine and of Isuprel was studied in three patients with complete heart block. The dose of epinephrine used was 1 mg., and of Isuprel 0.2 mg. A control electrocardiogram was made and the drug injected. Electrocardiograms then were made at five-minute intervals for fifteen minutes and thereafter every fifteen minutes for from one to two hours. The ventricular rate was increased by both drugs. In each instance the rise in rate following Isuprel was greater than that after epinephrine was given.

Sublingual administration. Following sublingual application of Isuprel in the treatment of bronchial asthma, the patient is frequently conscious of an increase in heart rate, which indicates that there is sufficient absorption of the drug to influence the sinus rate. The drug was administered by this route in four patients with heart block, and electrocardiograms then were made at five-minute intervals for from one to two hours. The dose for each patient was 15 mg. on one trial and 30 mg. on another occasion. The response to both doses was a sustained rise in ventricular rate. The increase in rate varied considerably and was from 3 to 47 beats per minute. The onset of the effect varied from fifteen to thirty minutes after the application of the drug and the duration was from 45 minutes to two hours.

ACTION OF DRUGS ON VENTRICULAR ACCELERATION AND FIBRILLATION

It would seem that the drugs indicated for the prevention and treatment of ventricular acceleration and fibrillation would be the cardiac depressant or antifibrillatory drugs. Quinidine has been used for this purpose in heart block and the reports are conflicting. De Boer[3] reported that quinidine was ineffective in the prevention of ectopic ventricular rhythms in heart block, and that the drug actually induced these rhythms, including ventricular fibrillation. His explanation was that quinidine produced variations in the refractory period irregularly in different parts of the heart, permitting the development of a circulatory wave from reentrant beats. Kerr and Bender[9] described a case of complete heart block in which attacks of ventricular fibrillation occurred during the course of quinidine therapy. Dock,[5] however, concluded that maintenance doses of quinidine prevented attacks of paroxysmal ventricular fibrillation. Escamilla,[6] after prolonged observation of a patient with attacks of paroxysmal ventricular fibrillation, concluded that quinidine seemed to be of some value but that the effect was not sufficiently constant to permit any absolute conclusions as to its efficacy. Schwartz and Jezer[22] made a careful study of two patients with complete heart block who were subject to transient seizures of ventricular fibrillation. Quinine hydrochloride and quinidine were administered intravenously in graded doses. Both drugs, quinine (maximum dose: 0.10 gm.) and quinidine (maximum dose 0.02 gm.) consistently induced either a prefibrillatory mechanism or transient periods of ventricular fibrillation. It is to be noted that the patient in Case 1, reported herein, died in syncope while receiving quinidine therapy. These observations indicate that the administration of quinidine may be hazardous in patients

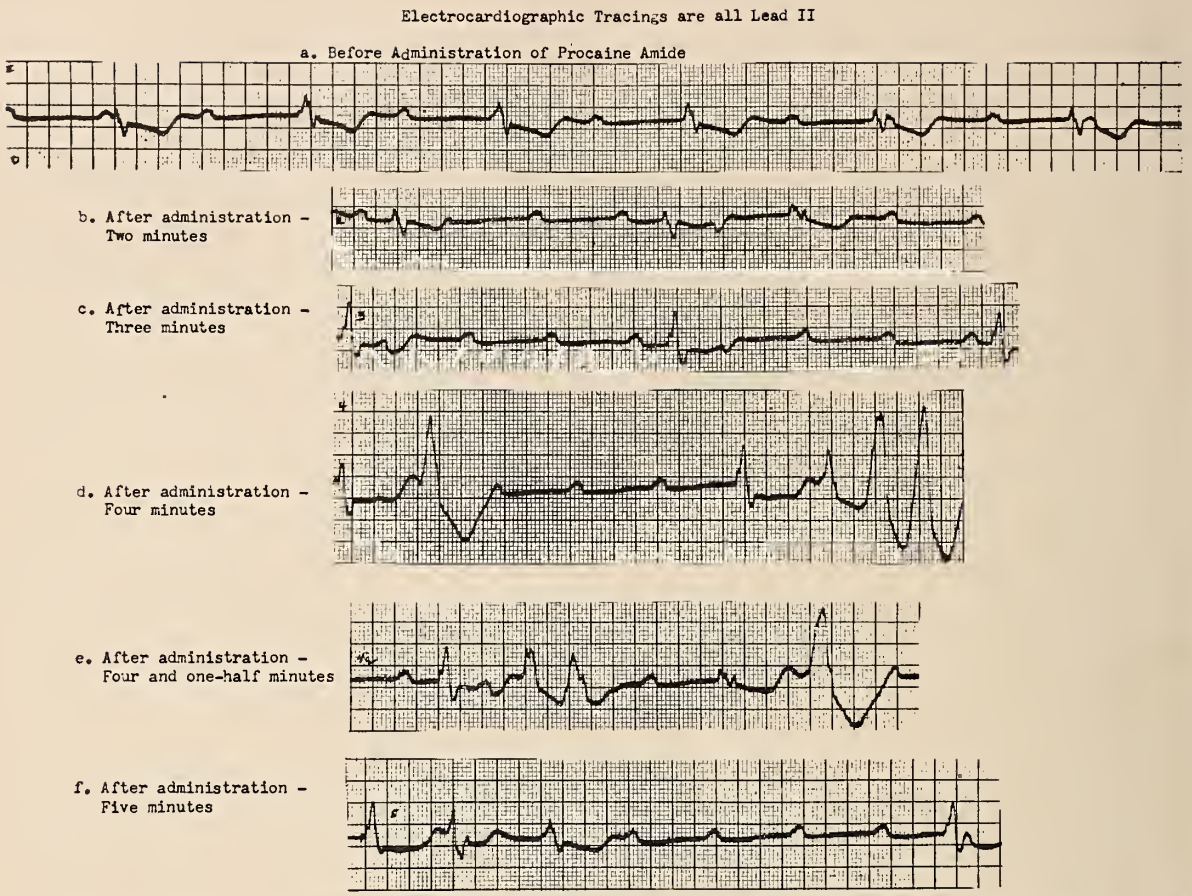

Figure 4.—Strip *A* shows complete heart block, ventricular rate, 34 per minute. Strips *B* and *C*, taken 2 and 3 minutes after the start of an intravenous injection of procaine amide, show a reduction of the ventricular rate to 25 and 20 beats per minute. Strips *D*, *E* and *F*, taken 4, 4½ and 5 minutes after the start of the injection, show most of the basic ventricular complexes replaced by multifocal ectopic ventricular beats.

with complete heart block in whom syncopal attacks are due to ventricular fibrillation.

Recently Mark and co-workers[12] reported the suppression of ventricular premature contractions and the termination of attacks of ventricular tachycardia by the administration of procaine amide (Pronestyl®). In a study of a group of 55 patients, Miller, Nathanson and Griffith[13] noted that this drug abolished ectopic ventricular beats and rhythms with great consistency. It seemed of interest to study the action of this drug in complete heart block. The drug was administered intravenously in four patients. The dose was 500 mg. in one patient, 300 mg. in another and 200 mg. in two patients. In each patient, there was a definite reduction in the ventricular rate. In two patients, the injection of procaine amide was followed by the appearance of ectopic ventricular beats from multiple foci occurring in runs, resembling the prefibrillatory mechanism described by Schwartz and Jezer (Figure 4). In the fourth patient, transient ventricular fibrillation followed the intravenous injection of 200 mg. of procaine amide. In the patient described earlier, in whom ventricular fibrillation was demonstrated as the mechanism of the syncopal attacks, procaine amide administered intravenously and orally had no influence on the frequency or duration of the attacks. These observations indicate that procaine amide, like quinidine, is of no value and is probably contraindicated in the therapy of heart block.

DISCUSSION

The importance of recognition of the mechanism causing the syncopal attack in heart block is apparent, since epinephrine and related compounds, indicated in the therapy of ventricular standstill, are contraindicated in ventricular fibrillation, as these drugs can precipitate this serious arrhythmia. The administration of these compounds, when the seizures are due to ventricular fibrillation, may cause transient arrhythmia to become permanent and fatal. The authors have observed that Isuprel is a very potent compound for the prevention and treatment of ventricular standstill. In addition to its potency, this drug possesses a most important advantage over epinephrine in that it does not appear to dispose the ventricles to fibrillation. Garb and Chenoweth[7] consistently produced ventricular fibrillation in cats during hydrocarbon inhalation by the administration of nor-epinephrine and epinephrine. Isuprel did not produce this arrhythmia, in any instance, under the same conditions. The authors' clinical observations tend to confirm the experimen-

tal studies of Garb and Chenoweth. In one case, that of a patient with complete heart block, the administration of epinephrine was followed by multifocal ectopic ventricular beats, and nor-epinephrine induced transient ventricular fibrillation. Isuprel in this patient produced a greater increase in the basic ventricular rate and yet the drug did not stimulate any lower ventricular rhythmic foci. This tendency for Isuprel to limit its action predominantly to the basic ventricular pacemaker has been quite consistent in the authors' studies. In contrast nor-epinephrine had no effect on the normal ventricular pacemaker and frequently induced multifocal ventricular beats, resembling a prefibrillatory mechanism. Epinephrine, while stimulating the basic pacemaker, also frequently excited lower ventricular foci.

The method of administration of Isuprel in the therapy of cardiac standstill depends upon the urgency of the situation. In the presence of syncope due to cardiac arrest, it may be advisable to administer the drug by intracardiac injection. An effective dose by this route is 0.02 mg. If the ventricular rate is at a critically low level, the drug may be injected intravenously in the same dose. These routes of administration are seldom necessary and the usual mode of application of the drug is by subcutaneous injection. A dose of from 0.14 to 0.2 mg. is usually sufficient to increase the rate of the ventricles. When syncopal attacks are infrequent and self-medication over a long period is desirable, Isuprel may be administered by the sublingual route. A dose of 15 mg. three or four times a day appears to be an effective amount.

It is apparent that there is no safe and effective drug for the prevention of paroxysms of ventricular acceleration or fibrillation in heart block. The reports in the literature indicate that quinidine has either no effect or an unfavorable one. As was noted in the present study, intravenous administration of procaine amide induces ectopic ventricular rhythms in heart block. It is of interest that such a response was not observed when this drug was given to patients who had arrhythmia of other kinds. Although the studies were limited, the results suggested that procaine amide may have undesirable effects in heart block. When the mechanism of the syncope is unknown, Isuprel possesses optimum features in its action, in that it will be effective when the mechanism is ventricular standstill and will exert no unfavorable effect when it is ventricular fibrillation. It would appear that Isuprel may be indicated when the mechanism is known to be ventricular acceleration. Parkinson, Papp and Evans[18] noted that, in a large proportion of patients in whom ventricular acceleration and fibrillation developed, the initial mechanism was followed by a ventricular standstill. Isuprel, by preventing the ventricular arrest, could shorten the duration of syncope. Levine and Matton[11] reported a case of Adams-Stokes syndrome in which, after ventricular fibrillation and asystole lasting five minutes, the patient recovered upon injection of epinephrine into the heart.

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REFERENCES

1. Adams, R.: Cases of diseases of the heart, Dubl. Hosp. Rep., 4:396, 1827.

2. Burnett, W.: Case of epilepsy attended with remarkable slowness of the pulse, Trans. Med. Chir. Soc. Lond., 13: 202, 1827.

3. De Boer, S.: Ventricular fibrillation in total heart block and the action of quinidine and quinine preparations in heart block, Nederl. Tijdschr. v. Geneesk., 2:2617, 1926.

4. Davis, D., and Sprague, B.: Ventricular fibrillation: its relation to heart block, Am. Heart J., 4:559, June 1929.

5. Dock, W.: Transient ventricular fibrillation as a cause of syncope and its prevention by quinidine sulfate, Am. Heart J., 4:709, Aug. 1929.

6. Escamilla, R. F.: Report of a case of paroxysmal ventricular fibrillation in relation to quinidine therapy, Am. Heart J., 8:850, Aug. 1933.

7. Garb, S., and Chenoweth, M. B.: Studies on hydrocarbon-epinephrine induced ventricular fibrillation, J. Phar. and Exp. Therap., 94:12, Sept. 1948.

8. Gertz, G., Kaplan, H. Q., Kaplan, L., and Weinstein, W.: Cardiac syncope due to paroxysms of ventricular flutter, fibrillation and asystole in a patient with varying degrees of a-v block and intraventricular block, Am. Heart J., 16:225, Aug. 1938.

9. Kerr, W. J., and Bender, W. L.: Paroxysmal ventricular fibrillation with cardiac recovery in a case of auricular fibrillation and complete heart block while under quinidine therapy, Heart, 9:269, Dec. 1922.

10. Lands, A. M., Nash, V. L., McCarthy, H. M., Granger, H. R., and Dertinger, B. L.: Pharmacology of N-alkyl homologue of epinephrine, J. Pharm. and Exp. Therap., 90:110, June 1947.

11. Levine, S., and Matton, M.: Observation on a case of Adams-Stokes syndrome showing ventricular fibrillation and asystole lasting five minutes with recovery following intracardiac injection of Adrenalin, Heart, 12:272, March 1926.

12. Mark, L. C., Berlin, I., Kayden, H. J., Rovenstine, E. A., Steele, J. M., and Brodie, B. B.: The action of procaine amide on ventricular arrhythmias, J. Pharm. and Exp. Therap., 98:21, Jan. 1950.

13. Miller, H., Nathanson, M. H., and Griffith, G. C.: The action of procaine amide in cardiac arrhythmias, J.A.M.A., 146:1004, July 14, 1951.

14. Nathanson, M. H.: Effect of drugs on cardiac standstill induced by pressure on the carotid sinus, Arch. Int. Med., 51:387, Mar. 1933.

15. Nathanson, M. H.: Further observation on the effect of drugs on induced cardiac standstill, Arch. Int. Med., 54:111, July 1934.

16. Nathanson, M. H., and Miller, H.: Effect of 1-(3,4, dihydroxyphenyl)-2-Isopropyl-aminoethanol (Isopropylepinephrine), on the rhythmic property of the heart, Proc. Soc. Exp. Biol. and Med., 70:633, April 1949.

17. New York Heart Assn.: Nomenclature and Criteria for Diagnosis of Disease of the Heart, ed. 4, New York, 1940, p. 68.

18. Parkinson, J., Papp, C., and Evans, W.: The electrocardiogram of the Stokes-Adams attack, Brit. Heart J., 3: 171, July 1941.

19. Schwartz, S. P.: Transient ventricular fibrillation, Arch. Int. Med., 49:282, Feb. 1932.

20. Schwartz, S. P.: Studies on transient ventricular fibrillation. The prefibrillatory mechanism during established a-v dissociation, Am. J. Med. Sc., 192:153, Aug. 1936.

21. Schwartz, S. P., Orloff, J., and Fox, C.: Transient ventricular fibrillation, Am. Heart J., 37:21, Jan. 1949.

22. Schwartz, S. P., and Jezer, O.: The action of quinine and quinidine on patients with transient ventricular fibrillation, Am. Heart J., 9:792, Aug. 1934.

23. Stokes, W.: Observation on some cases of permanently slow pulse, Dubl. Quart. J. M. Sc., 2:73, 1846.

Avoiding Pitfalls in Urologic Diagnosis

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SUMMARY

Eight basic steps properly executed are necessary to correct diagnosis of urinary disorders: (1) History-taking, (2) general physical examination, (3) abdominal examination, (4) examination of external genitalia, (5) examination of the urine, (6) rectal examination and prostatic smear or vaginal examination, (7) tests of total renal function, (8) roentgenography as indicated.

If these procedures are carried out in this order, more information will be obtained and misleading findings will be avoided.

IF it were possible to analyze all diagnostic failures in urology, it would probably be found that an overwhelming majority are attributable to lack of adequate examination. "Adequate examination" does not refer to the technical steps such as cystoscopy and ureteral catheterization, but means taking full advantage of the simple steps of the urological examination (Table 1) which can be carried out by any general practitioner in his own office.

When eight basic steps are executed properly, an accurate diagnosis can be reached in over 90 per cent of cases in which patients consult a physician because of symptoms referable to disease of the urogenital tract. By adhering to this specific routine the physician will avoid omitting any of the vital steps and also avoid committing errors that arise when they are carried out in an improper sequence.

Step 1, the History: Nothing unusual is required in taking the history except that particular stress is placed on complaints referable to the urogenital tract. A physician should not be misled by a report of chills. Chilly sensations are common, almost universal; actual chills are unusual. An authentic shaking chill is of diagnostic importance if it is caused by urinary infection, because then it usually indicates an acute renal infection, sometimes acute prostatitis, but almost never cystitis.

Step 2, General Physical Examination: This includes examination of the head, neck, chest and the nervous system and precedes special attention to the urogenital organs. This part of the examination assumes greater importance if a patient is to be operated upon, when the condition of the cardiovascular system is a material factor, and in any effort to discover systemic evidence of tuberculosis, malignant growth and the like. A neurologic examination is especially required when the possibility of a nervous disorder, such as neurogenic bladder disease, is encountered.

Step 3, the Abdominal Examination, includes special attention to the regions occupied by the kidneys, the ureters and the bladder.

One word of caution about renal palpation: Failure to elicit signs of tenderness does not rule out the possibility of infection in the kidney. Chronic renal infection often causes no physical symptoms, and even acute infections may produce no pain or tenderness, particularly in children. Even with a temperature of 104° or 105° F. caused by fulminating pyelonephritis, children frequently have no lumbar pain and no tenderness upon palpation. The most reliable means of detecting minimal tenderness is percussion with the fist posterior to the kidney, but even this may not be successful.

Step 4, Examination of the External Genitalia: Here lie many pitfalls for the inexperienced ob-

TABLE 1.—*The Routine Non-Instrumental Steps of a Urologic Examination.*

1. *History:* (a) Urinary, (b) Sexual, (c) Other systems.
2. *General physical examination apart from urogenital tract:* Temperature, pulse, respiration, blood pressure. (a) Head, (b) Neck, (c) Chest, (d) Nervous system.
3. *Abdominal Examination:* Particular care in examining the regions occupied by kidneys, ureters and bladder, including fist percussion of the renal areas posteriorly.
4. *Examination of external genitalia: Making a urethral smear when a discharge is present.* This step is carried out prior to collecting the urine because it is impossible to be certain of the presence of a urethral discharge or to obtain a smear after the patient has voided.
5. *Examination of the urine:* Male, three-glass test; female, catheterized specimen. Three-glass test roughly differentiates lower from upper tract disease in the male. Microscopic elements found in the voided urine may come from extraneous sources in the female.
   (a) Specific gravity (d) pH
   (b) Protein (e) Microscopic examination
   (c) Sugar (f) Stain of urinary sediment.
6. *Rectal examination and prostatic smear in the male; vaginal and rectal examination in the female:* In the male the patient voids prior to examination of the prostate; otherwise the prostatic secretion will contain pus from the urethra if urethritis is present, rendering it impossible to localize its source.
   (a) Examination of anus and sphincter
   (b) Palpation of prostate and seminal vesicles
   (c) Gentle massage of prostate and stripping of seminal vesicles unless contraindicated, as in the presence of acute infection.
   In the female the urine is withdrawn with a catheter prior to pelvic examination in order that this examination may be made with bladder empty.
7. *Total renal function:*
   (a) Tests of excretion (PSP)
   (b) Tests of retention (blood urea, nonprotein nitrogen, creatinine).
8. *Roentgenography (as indicated):* Plain x-ray of kidneys, ureters and bladder, intravenous urograms, x-rays for evidence of metastasis.

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server. The physician should ascertain whether there is or has been a urethral discharge. This must be done before examination of the urine (Step 5), because if the patient urinates just before examination of the external genitalia any urethral discharge will be washed out by the urine.

Dependence must not be placed upon a patient's statement that he has had no discharge. In females, vaginal secretions are so common that many consider them natural; males may be either oblivious to a discharge or ashamed to admit its presence. In examining for a urethral discharge it is advisable to strip the urethra. This one simple maneuver will often provide the clue to the source of obscure pyuria. In the female, pressure over the urethra may disclose an unsuspected diverticulum when a gush of pus is expressed into the external urethral orifice.

Two misconceptions to be avoided concern the significance and character of a urethral discharge: First, that every urethral discharge is gonococcal, and second, that a precise diagnosis can be made by gross inspection of the discharge—that the infection is gonococcal if the discharge is thick and creamy but nonspecific if it is thin and watery. In many cases of acute nonspecific urethritis the discharge is purulent, while a gonococcal discharge may be detectable only as a thin serous ooze, sometimes characteristic in repeated attacks.

In order to make an accurate distinction, a stained smear of the discharge must be prepared and the organisms present identified under a microscope. This simple procedure can be carried out by a physician in only a few minutes (Table 2). The advantage to a physician in making the smear himself is that he can determine at once whether and what treatment is required; also how many organisms and pus cells are present and whether the diagnosis is clearly evident or merely suspicious—information sometimes difficult to obtain second-hand.

In examination of the external genitalia it must be ascertained whether the external urethral orifice is of normal size. Unrecognized congenital atresia of the orifice may lead to severe obstruction and even to bilateral hydronephrosis and profound uremia (Figure 1).

Lest an obscure testicular neoplasm be overlooked meticulous care must be taken in palpating the testis. A testicular tumor may be little larger than the eraser on a lead pencil. Since the majority of tumors of the testis are malignant, it is extremely important to detect them as early as possible. Tumors of the epididymis, on the other hand, are extremely rare and almost always benign.

A fairly common error is failure to recognize torsion of the spermatic cord, a condition which demands immediate operation. Torsion is frequently misdiagnosed as acute epididymitis, and before the error is recognized the testicle is beyond salvage. Although the two conditions are similar in that they are both exquisitely painful, certain features differentiate them; but if there is any doubt, the safer course is surgical exploration of the scrotum.

TABLE 2.—*Simple Methods for Useful Office Procedures*

1. *Examination of the urine:*
   - (a) *The three-glass test in the male:* Instruct patient to void without interruption into three glasses. First glass contains washings from urethra; second and third, urine from bladder; third glass may contain pus or blood introduced by piston-stroke action of vesical neck closure, as in acute posterior urethritis.
   - (b) *Determination of the pH:* Nitrazene paper.
   - (c) *Protein tests (albumin):* Add a few drops of sulfosalicylic acid (20 per cent).
   - (d) *Sugar:* Add a Clini-test tablet.
   - (e) *Examination of sediment:*
     1. Centrifuge adequately.
     2. Invert centrifuge tube to allow all but a few drops to drain out.
     3. Make thin smear of sediment on clean slide; examine under microscope (low and high dry fields).
     4. Dry over low flame to fix (do not burn.)
     5. Stain.
        - a. Loeffler's methylene blue—most rapid stain for common pyogenic bacteria, excellent for showing morphologic features—best general purpose office stain.
        - b. Gram stain—best for identification of gonococci.
     6. Examine under oil immersion lens.
   - (f) *Determining cause of cloudy urine:*
     1. Phosphates—clear on acidification (add few drops glacial acetic acid).
     2. Carbonates—clear on acidification, with formation of bubbles.
     3. Urates—white or pink cloud (brick dust deposit), clear on heating.
     4. Chyluria—clears upon shaking with ether.
     5. Pus—determined by microscopic examination, does not clear on acidification or heating
     6. Bacteria—determined by microscopic examination, do not clear on acidification or heating.
     7. Red blood cells—determined by microscopic examination, do not clear on acidification or heating.
     8. Spermatozoa—determined by microscopic examination, do not clear on acidification or heating.
     9. Prostatic fluid—determined by microscopic examination, does not clear on acidification or heating.
2. *Urethral Smear:*

   Examine wet for trichomonas (add 1 per cent safranine for better identification). Heat over low flame to dry and fix—do not burn. Stain with methylene blue or Gram stain. Examine with oil immersion lens.
3. *Prostatic Smear:*

   Collect specimen, after massage, on clean glass slide; occasionally stripping of urethra or having patient void a few drops of urine is necessary to obtain secretion. Examine under low power, noting presence of pus (leukocytes numbering less than 5 per cent of all cellular elements are of no clinical significance), trichomonas, lecithin bodies, corpora amylacea, etc. Stain to determine presence of bacteria.
4. *Tests of renal function:*
   - (a) *Specific gravity of urine:*
     A specific gravity of 1.025 or higher, if no protein is present, indicates normal renal function.
   - (b) *PSP* (simple modification as office procedure):
     1. Have patient drink 2 glasses of water.
     2. Inject 1 ml. of dye intravenously.
     3. Collect urine 20 minutes after injection.
     4. Place entire specimen in 1,000 ml. graduate, add a few ml. of 10 per cent sodium hydroxide to color red and dilute to 1,000 ml. with tap water.
     5. Determine percentage of PSP excretion with colorimeter—normally 25 to 50 per cent is excreted in 15 minutes. In this 20-minute test 5 minutes is allowed for appearance time.

Figure 1.—Bilateral hydronephrosis and hydroureter in a boy 11 years of age with profound uremia from congenital atresia of external urethral orifice. Note trabeculation of the bladder. (Courtesy of Dr. George L. Torassa.)

Step 5, Examination of the Urine, likewise presents many pitfalls to the unwary. One of the commonest is to conclude that a female patient has pyuria or hematuria merely because the voided specimen contains pus or erythrocytes. The presence of pus cells, erythrocytes or bacteria in the voided urine of a female patient may be of no clinical significance, yet many a patient is referred to a urologist on the basis of these findings alone. The proximity of the urethra to the vagina frequently permits contamination of the urine with the products of vaginal discharge and menstrual flow. Mistake as to the source of contamination may be avoided by taking a specimen of urine by catheter whenever abnormal elements are found. In urologic practice female patients are catheterized routinely to save time, for if, after voided urine is found to contain pus or blood, a catheter is introduced to obtain a proper specimen, there is usually no urine left in the bladder.

Simple examinations of the urine can be conveniently performed by a physician (Table 2). If the urine is sent to a laboratory there is always the chance that examination may be delayed and that, if it is, erythrocytes may disintegrate in acid urine and extraneous bacteria may be introduced and multiply. Furthermore, here as with examination of the urethral discharge, immediate examination provides a guide for immediate treatment.

By the simple means of the three-glass test of the urine of a male patient it is possible roughly to distinguish disease of the lower urinary tract from disease of the upper tract. For instance, if pus cells are contained in only the first glass of the voided urine, it is certain that infection is confined to the lower urinary tract and that there is no infection of the kidneys—unless there is blockage of a ureter. Another way in which the three-glass test may prove valuable is in localizing the source of hematuria in male patients. If, for example, the blood is equally distributed in all the urine voided, it probably comes from the bladder or the upper urinary tract. If, on the other hand, the first and second glasses are relatively clear and there is a great deal of blood in the third glass, it is practically certain that the lesion is at the neck of the bladder and that the blood is forced into the urine by the piston-stroke action of vesical closure.

Gross examination of the urine is inadequate, but often nothing more is attempted. If a specimen appears to contain blood, for example, there is a strong temptation not to bother to examine it under a microscope. Yet if this is not done, hemoglobinuria cannot be recognized, nor can it be known whether the blood is accompanied by pus cells and bacteria indicating that bleeding may be caused by infection in the urinary tract.

Often a person seeks medical advice because of cloudy urine. Cloudiness of the urine does not mean that it contains pus, yet the misconception that it does is common among patients, if not among physicians. Whether it does or does not can be determined readily by examining the sediment under the microscope. Likewise, foul smelling urine is not always indicative of disease; frequently fetor results from the ingestion of asparagus or from some other benign cause.

An error that causes failure to recognize chronic pyelonephritis is the belief that if there are no pus cells in the urine there is no urinary infection. In many cases of chronic nonspecific pyelonephritis, the urine contains bacteria but no pus cells or erythrocytes. For this reason it is necessary to examine not only a wet smear of the urinary sediment, but also a stained specimen. Usually, motile bacilli can be seen in the wet preparation, but it is impossible to detect cocci without a stain. Other conditions in which bacteria often are present in the urine without pus or erythrocytes are perinephritis, perinephric abscess and the early stages of coccal nephritis.

If pus cells are present in the urine, and bacteria are not, usually the source is nonspecific prostatitis or urethritis. The reason for the absence of observable bacteria in most such cases is not always clear. Some infections are caused by organisms like those of pleuropneumonia, which are detectable only by special cultural methods. To be considered also is that, if a patient has been receiving antibiotics, bacteria frequently have been eliminated by the action of the drug. In other instances, an apparently amicrobic infection may be tuberculous: tubercle bacilli are difficult to detect in the urine by ordinary means of examination.

Another common misconception is that if the urine is normal there is no lesion of the urinary tract. This leads to error in the case of female patients with frequency of urination, dysuria, suprapubic pain and nocturia. Often if the urine contains no pus or

erythrocytes or organisms, the underlying condition is thought to be functional, although these symptoms of vesical irritability may be caused, without any abnormality in the urine, by any of five conditions: (1) submucous fibrosis, (2) trigonitis, (3) contracture of the vesical neck, (4) neurogenic disorder of the bladder, and (5) stricture of the urethra. Cystourethroscopic examination is necessary.

Step 6, Rectal Examination and Examination of Prostatic Secretion. Perhaps the most important word of caution is to urge that rectal examination never be omitted. Even after Osler's sage advice that nine-tenths of all rectal lesions lie within one finger's-length of the anus, some physicians omit this essential step or, if they do make the examination, fail to interpret the findings accurately.

Dr. Egon Wildbolz of Berne, Switzerland, once spoke in San Francisco on the early diagnosis of carcinoma of the prostate. When he had completed his talk a medical student asked, "Doctor, can you tell me just how one makes the diagnosis of carcinoma of the prostate by rectal examination?" Although Dr. Wildbolz had devoted at least thirty minutes to discussion of that procedure, he did not hesitate to reply, "Yes," he said, "I can tell you. If you perform 2,000 rectal examinations you will have absolutely no difficulty in making early diagnosis of carcinoma of the prostate."

It is an inviolate rule that prostatic massage must never be performed if there is acute infection in the urethra or in any part of the seminal tract, because of the danger of increasing and spreading the infection. In all other cases, examination and massage of the prostate gland must follow, not precede, collection of the urine—this in order that the cellular elements of the urine and the prostatic secretion will not be mixed. It is probably reversal of the order of these procedures which gives rise to the misconception that chronic prostatitis is a common disease. If a patient has mild urethritis, which is a common disease, massage of the prostate gland presses the secretion through the purulent urethra. Consequently, the pus in the secretion is erroneously thought to be due to prostatic infection. If the patient urinates before the prostatic secretion is ex-

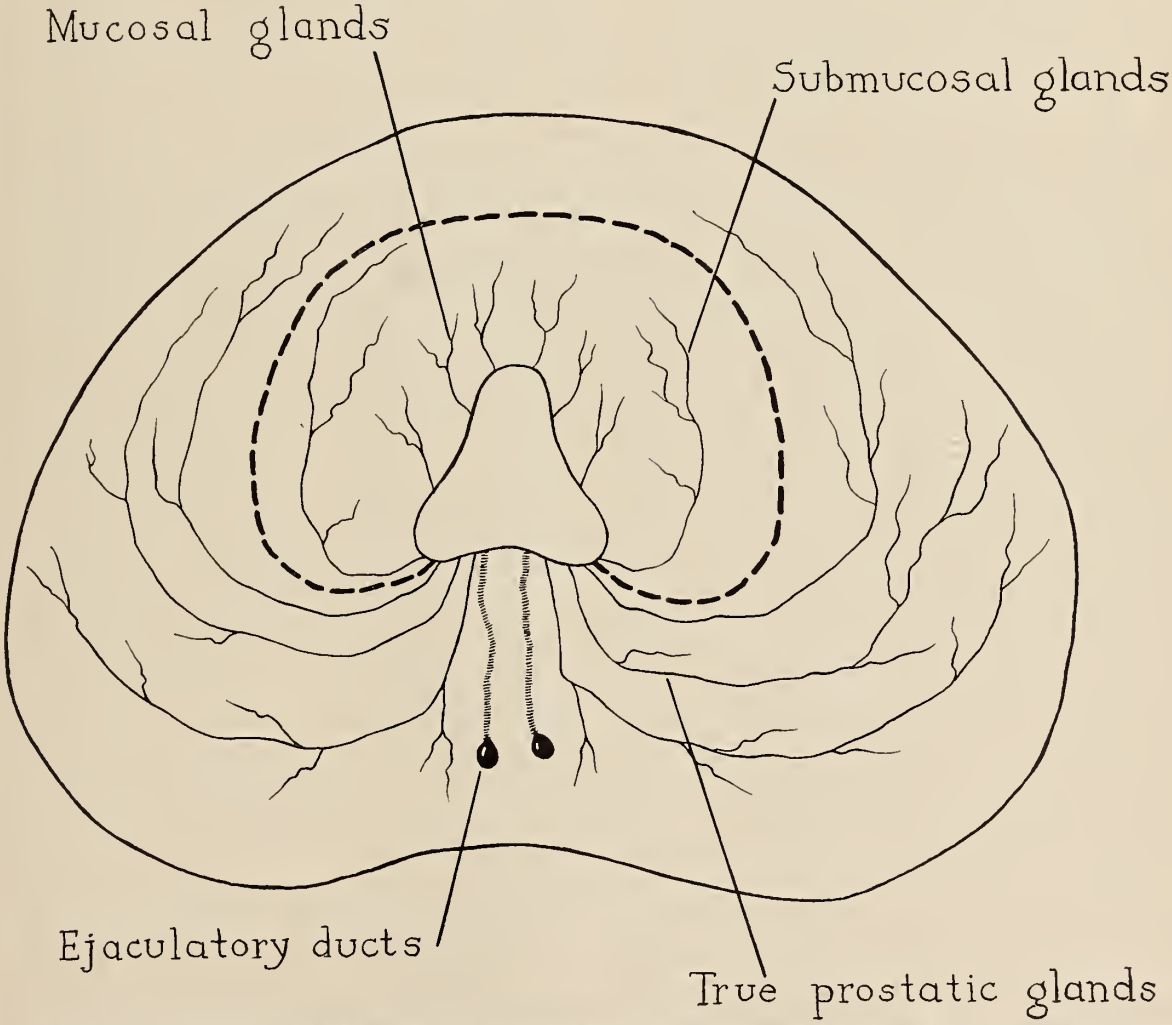

Figure 2.—Cross-section of arrangement of prostatic glands. Pressure must be applied from a lateral direction medially in order to express secretion.

Figure 3.—Method of prostatic massage. Firm but gentle pressure is applied with a rolling motion of flat surface of index finger. Final step is gentle stripping of seminal vesicles and evacuation of prostatic urethra.

pressed, this error is avoided. The presence of a few pus cells in seminal fluid (less than 5 per cent of the cellular elements) that is obtained after the patient has urinated is not indicative of prostatitis.

Massage of the prostate gland is not an innocuous diagnostic procedure. It should be carried out with extreme gentleness and at infrequent intervals; done vigorously and repeatedly, it may cause traumatic prostatitis. It is not necessary to massage the prostate gland three times within a week to make certain that prostatitis is not present. If the gland seems normal on palpation and if the secretion is normal, these observations should be considered sufficient evidence that there is no infection.

O'Connor[1] in experiments with dogs noted that repeated prostatic massage evokes traumatic prostatitis. In a controlled series of animals, the degree of prostatitis noted at necropsy was directly proportional to the number of massages the animals received: After the prostate had been massaged daily for seven days, there were extensive abscesses and diffuse parenchymal prostatitis. Dogs that had had fewer prostatic massages had proportionately less prostatic involvement. In those dogs in which the prostate had not been massaged, it was normal.

Parallel observations were plentiful in the author's early clinical experience when frequent prostatic massage was more commonly resorted to. Vigorous massage often evoked a violent inflammatory reaction in a normal prostate gland or in one with minimal chronic prostatitis. It is the author's present opinion that treatment of even mild, asymptomatic chronic prostatitis by vigorous or frequent massage is of no benefit, and that patients with such a condition do better with no treatment at all. The fear of focal infection from prostatitis seems to have been exaggerated and the hazard not as serious as it was formerly believed to be. The fact that patients without urogenital complaints are no longer so often referred to urologists in an effort to find foci of infection is indicative that others in the medical profession are coming to share this opinion.

With regard to the rectal examination, it should not be concluded, merely because the prostate seems normal on rectal palpation, that the possibility of an obstruction of the vesical neck has been ruled out. Although the rectal surface may be normal, the vesical neck may be severely obstructed by a median lobe or a median bar or by intravesical projection of the lateral prostatic lobes.

Another pitfall lies in making the erroneous diagnosis of prostatitis on the sole basis of tenderness on rectal palpation. In many cases the normal prostate is tender—so tender, as a matter of fact, that palpation may cause patients with no disease of the prostate to lose consciousness. (It is mystifying that, as a general rule, patients experience more pain during rectal examination than during passage of a urethral catheter.)

A knowledge of the glandular structure of the prostate enables the physician to perform prostatic massage intelligently. Since the ducts drain toward

the urethra (Figure 2) it is important to apply pressure from the side medially. The prostate should not be rubbed. By applying firm but gentle pressure with a rolling motion of the flat surface of the index finger (Figure 3), secretion is obtained without damage to the delicate glandular structure of the organ. As a final step, secretion is evacuated gently by stripping the seminal vesicles and the urethra. The reason so many physicians fail to obtain secretion on prostatic massage is that they do not observe these few simple rules.

The counterpart of the rectal examination of males is the combined rectal and vaginal examination of women. Here a point to remember is that this step must follow, not precede, catheterization of the bladder, for urine retained in the bladder may be mistaken for a pelvic mass, an error which has even led to unnecessary pelvic operations.

Step 7, Tests of Total Renal Function, is not necessary if the diagnosis has been established by the previous steps, as for example in cases of uncomplicated urethritis or hydrocele of the tunica vaginalis. If, on the other hand, the symptoms or the previous investigation indicate the possibility of abnormality of the kidneys or ureters, the carrying out of this and the following step is imperative. Study of the upper urinary tract is likewise required if a lesion in the lower urogenital tract involves or affects the upper urinary tract.

There are two groups of tests from which to choose: (1) the tests of retention and (2) of excretion. An accurately performed test from either of these groups is sufficient, but tests from one group may be used to confirm those from the other.

All tests of urinary retention—determination of blood urea, non-protein nitrogen and creatinine—are innocuous. Disadvantages are that they are not office procedures and that obtaining a report is delayed.

Fortunately, two innocuous tests of excretion are simple office procedures and can be carried out within a few moments by a physician or a nurse: (1) Determination of the specific gravity of the urine. If the specific gravity is 1.025 or above and there are no abnormal cellular elements, renal function is normal. (2) The phenolsulfonphthalein (PSP) test. This is especially useful in a busy office practice when three or four new patients all come in at the same time. A nurse can inject 1 ml. of PSP intravenously, or even intramuscularly, and the patient will be content to wait while the test is in progress, knowing time is not being lost until the physician can see him. Collection of urine can be made at intervals of from 20 minutes up to two hours, allowance being made for the time of collection. The PSP test can also be used as an isolated test or a confirmatory test to check renal function of patients whose urine has a low specific gravity or contains cellular elements. Excretion of 25 per cent or more of the dye within 20 minutes after intravenous injection is a rough indication of normal function. If no more than 15 per cent has been excreted within that time, function is probably adequate to permit excretion of the contrast medium for intravenous urography, but if the percentage drops below this, the risk is too great. To conclude the PSP test a urethral catheter is passed to determine the amount of residual urine. This assures that all the urine has been collected for the PSP reading—as it must be for an accurate determination.

Intravenous urography is another excretory test of renal function, but it is not without hazard, as will be explained. With the use of this method, a roentgenogram made after the patient urinates provides a check on the amount of residual urine.

It should be pointed out that none of the tests of renal function gives indication of renal reserve. When the readings are normal there is no way of distinguishing between patients with a large renal reserve and those who may be on the borderline of renal failure.

Step 8, Roentgenography: Like the tests of renal function, this step may be unnecessary if a conclusive diagnosis has been previously established. If roentgenography is decided upon, the tests of renal function are a prerequisite. The radiologist tests the patient for sensitivity to the contrast medium, but it is the responsibility of the physician ordering the study to be certain that the patient has adequate renal function. If the renal function is severely impaired, not only are intravenous urograms a wasted expense to the patient (because the kidney shadows do not appear on them), but there is a very real danger in injecting a contrast medium that will not be promptly excreted. The author has observed one fatality that resulted from this error: The patient, a young man, died of pulmonary edema caused by the retained medium. Evidence of acute glomerulonephritis was found at autopsy. In that case urography had been precipitously ordered when hematuria was observed; no prior examination of the urine or test of renal function was made, although these steps would have established the correct diagnosis and revealed the danger of intravenous urography.

A few cautions should be kept in mind regarding the interpretation of intravenous urograms:

1. The fact that a kidney is not visible during the intravenous study is not certain evidence that the kidney is absent or functionless. It is a danger signal that demands prompt interpretation, usually by cystoscopy, in the hope of salvaging a functioning kidney that is being destroyed by a block of some kind.

2. A normal calyceal and pelvic outline is no indication that the kidney is normal unless the outline is surrounded by a wide rim of renal parenchyma (Figure 4). An infantile or an atrophic kidney may be deceptive in excreting the contrast medium promptly and producing a pelvic shadow which on superficial examination appears normal. In interpretation of a urogram, as much stress must be placed on the appearance of the entire kidney as upon the internal anatomy of pelvic structures.

3. A grossly normal appearance on an intravenous urogram cannot be assumed to rule out the possibility of early renal tumor. Excretion urography cannot be relied on for the detection of

early filling defects and minute lesions of the renal pelvis. Retrograde pyelograms, supplemented by lateral views, provide shadows that are far better defined. By this means more adequate filling and a better concentration of the contrast medium is obtained.

Three additional generalizations, while not directly concerned with diagnosis, and not to be considered inviolable laws, may prove helpful:

1. Hemospermia does not usually bear the same serious implication as blood coming from other organs of the body. It usually originates from prostatitis, seminal vesiculitis or early benign prostatic hypertrophy, not usually from carcinoma of the prostate.

2. Contrary to common belief, hematuria occurs more frequently in cases of benign hypertrophy than in cases of carcinoma of the prostate. The reason is obvious: Benign hypertrophy originates in the periurethral glands, carcinoma in the periphery of the prostate.

3. Patients are always more alarmed about hematuria associated with pain than they are about painless hematuria although the latter is decidedly more ominous. Painful hematuria usually indicates urinary infection or calculous disease, whereas painless hematuria more regularly signifies tumors.

Although careful execution of the non-instrumental steps outlined above suffices for the diagnosis of most urological conditions, it is just as important to understand their limitations as to know how to execute them, for in some instances additional studies are required. The overwhelming indication for instrumental examination is lack of a clear-cut diagnosis after non-instrumental study. The specific indications may be summarized by stating a few general principles:

Cystourethroscopy is indicated (1) to determine the cause of residual urine, (2) to identify the cause of unexplained urinary complaints.

Study of the upper tract is indicated (1) to determine the cause of unexplained failure of function of one or both kidneys reflected in the results of the total renal function tests or intravenous urograms, (2) to elucidate any obscure findings noted on intravenous urography, or to supplement intravenous urograms when no gross abnormality is noted but renal tumor is suspected.

A complete urological investigation, which includes cystourethroscopy, supplemented by ureteral catheterization when indicated, should be performed whenever the cause of hematuria, pyuria or bacteruria is not explained by non-instrumental study.

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REFERENCE

1. O'Connor, Vincent J.: Critical analysis of therapeutic measures in the management of pyogenic prostatitis, J. Urol., 39:156-161, Feb. 1938.

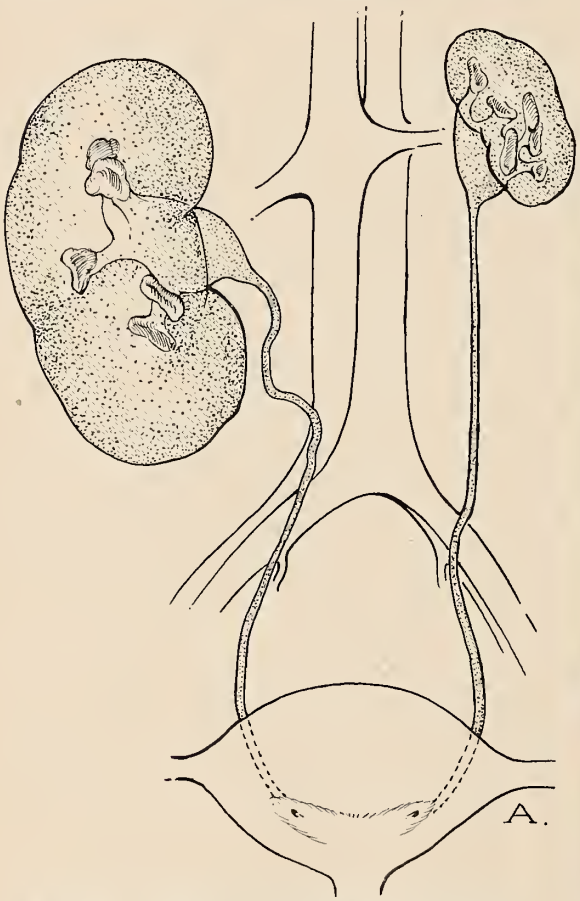

Figure 4.—Congenital hypoplasia of left kidney. Note narrow rim of secretory tissue insufficient to support life. Although superficial study of pyelogram (B) might suggest a normal left kidney, error in diagnosis is avoided by noting: (1) Narrow rim of parenchyma on left, (2) large size of right kidney due to compensatory hypertrophy, (3) infantile type of left renal pelvis.

Medical Group Practice in California

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SUMMARY

A 1950 study of group practice in California reveals 52 "true general medical groups" among 123 medical organizations surveyed, involving 634 full-time and 215 part-time physicians. The groups, in contrast to the national patterns, tend to be larger, younger and more urban. There is also a greater tendency toward unit hospital affiliation (30 groups) and operation of group prepayment plans (10 groups).

In general similarity to the national scene, California groups are most frequently organized as private partnerships with a salary method of remuneration sometimes augmented by a share of net earnings. The range of medical and technical services offered varies widely with the size of the group.

The combination of group prepayment, medical group practice, and coordinated medical-hospital centers seems to offer special opportunities for satisfactory practice and adequate medical care.

GROUP practice has developed as an increasingly significant form of medical organization in the United States. With the stated objectives of coordinating the technical complexity of modern medicine and achieving economy and efficiency of patient care, the group movement has attracted the attention of a growing number of physicians. Literature on the subject was recently summarized by the American Medical Association.[1] A comprehensive national survey of 368 medical groups was reported in 1946 by the Public Health Service.[2-8] The present study of group practice in California was undertaken to determine the nature of the movement in this state, and to compare it with the reported data for the nation as a whole.

Definition of Group Practice

"Group practice" is a term used rather loosely with varied applications to the association of physicians in offices, clinics, hospitals and the like. For the purposes of this study, a fairly specific definition of "true" medical group practice was adopted in an effort to distinguish between formal group affiliation and the many limited forms of cooperation among physicians. The requirements of a "true general medical group" were established as follows:

1. A systematic association of at least three full-time physicians;
2. More than one specialty of medicine represented;
3. Joint use of office facilities and auxiliary personnel;
4. Formal organization for administration and financing;
5. Pooling of income and sharing of common overhead expenses, with net payments to physicians made according to a prearranged plan.

Thus, many types of medical affiliations were excluded from the analysis, for many did not satisfy all the five criteria.

METHODS AND MATERIALS

In the spring of 1950, a list of all known groups, clinics, medical associations and the like was compiled from every available source—including the state registry of licensed clinics, the Public Health Service list of groups surveyed in 1946,[6] the files of groups participating in the California Physicians' Service and the personal knowledge of physicians and others throughout the state. A total of 123 organizations were listed. To each was sent a specially designed questionnaire, which had been previously field-tested and modified accordingly. Incomplete returns were followed up by mail and telephone. A representative sample of the 52 groups subsequently designated as "true general medical groups" were visited in person to validate the questionnaire and provide first-hand experience with existing group patterns.

Response to questionnaire. Of the 123 units canvassed, 92, or 75 per cent, completed the questionnaire. When the criteria of true group practice were applied to the data supplied, 52 groups, or 56.5 per cent of the units reporting, met the full requirements. These 52 groups, therefore, are the basis for the analysis which follows. This response and this proportion of "true" groups correspond quite closely with the experience of the national survey.[8]

ANALYSIS OF FINDINGS

Extent of Group Practice

Current estimates for the United States as a whole indicate some 500 medical groups, with fewer than 5,000 physicians, full- and part-time. Although this constitutes less than 3 per cent of the active profession, there is much evidence (including the Amer-

From the Division of Medical Care Administration, School of Public Health, University of California, Berkeley. This paper is a summarization of a detailed survey of medical groups in California as compared with data on group practice for the United States as a whole. The full report, including complete tables and charts, is available upon request from the School of Public Health.

Technical assistance was provided by George S. Goldstein and Ann Waybur. Much of the basic data was accumulated as part of a graduate student project by Robert Heilman, M.D., Sterling Gill and Arthur Holstein. The study was financed in part by a grant from the Rockefeller Foundation to the School of Public Health.

ican Medical Association survey of 1945[9]) that many more physicians are interested in the movement and are undertaking less formal modes of group association. Of the 368 groups identified in the 1946 national survey, some 26 were listed for California, and the state had 315 of the 3,084 full-time group physicians reported at that time.[8] The present study, however, designated 52 groups and 634 full-time physicians for the state in 1950—although only eight of these California groups have been organized since 1946. These differences are important in comparing the national and state data for the two years.

The 52 California groups identified in 1950 involve a total of 849 physicians (634 full-time and 215 part-time), constituting about 8 per cent of the practicing physicians in the state. As there were 1,037 physicians connected with all of the 92 units which returned the questionnaire, it is suggested that an even greater proportion of the California medical profession is involved in some form of group affiliation.

Geographical Distribution of Groups

Medical group practice in California is predominantly an urban phenomenon; 55 per cent of groups and 73 per cent of all the group physicians are located in the two major metropolitan areas (Table 1). Los Angeles County has 31 per cent of the groups and 28 per cent of the physicians, while the San Francisco Bay Area has 24 per cent of all groups and 45 per cent of all group physicians. Of the ten groups operating their own prepayment plan, eight are in these two areas, and a ninth—in San Diego—is also located in a large urban community.

TABLE 1.—*Distribution of Groups and of Physicians in Group Practice by County—California 1950*

County	Groups		Physicians in Group Practice	
	Number	Per Cent	Number	Per Cent
All counties	52	100	849	100.0
Los Angeles	16	31	236	27.8
San Mateo	5	10	40	4.7
San Diego	4	8	46	5.4
Alameda	3	6	212	25.0
Santa Barbara	3	6	40	4.7
San Bernardino	3	6	40	4.7
San Francisco	2	4	77	9.1
Santa Clara	2	4	55	6.5
Stanislaus	2	4	13	1.5
Tulare	2	4	12	1.4
Yuba	1	2	12	1.4
Orange	1	2	10	1.2
Sacramento	1	2	9	1.1
Fresno	1	2	8	0.9
Riverside	1	2	8	0.9
Sonoma	1	2	8	0.9
San Luis Obispo	1	2	7	0.8
Kern	1	2	7	0.8
Placer	1	2	5	0.6
Santa Cruz	1	2	4	0.5

Percentages do not add up to 100 because of rounding.

General Characteristics of the Groups

Group affiliation. Forty-eight, or 92 per cent, are private medical groups. The other four are industrial, cooperative and university-affiliated. This distribution is similar to the national pattern.[2]

Primary activity. All of the 52 groups are organized to provide general medical care. (Among the original 123 units canvassed, there were also eight single-specialty groups, two units practicing only part-time, and thirty less formal associations.)

Size of group. Table 2 reflects the great weight of the few very large groups now in operation. Although four-fifths (41) of all groups are small (fewer than eleven full-time physicians), they account for less than two-fifths of the total number of full-time physicians. But the six largest groups include over half of all the full-time physicians. In addition, two groups defined as small in terms of number of full-time physicians, nevertheless have a great many part-time members. Nationally, the groups tend to be smaller; California has twice as large a proportion of its full-time physicians in very large groups as has the United States.[8]

Age of groups. Group practice in the state is relatively mature; thirteen of the 52 groups are 21 or more years old, and 32 units are 11 or more years old. As might be expected, only five groups (10 per cent) were organized in California during World War II. In the five immediate postwar years, however, almost as many new groups were formed (15) as in the ten years preceding the war. Again, the national pattern is different—in that there is a greater preponderance of older groups. This is also reflected in the fact that the mean age of California groups is 14.3 years, compared with 19.9 years for the whole United States.[3]

Form of organization. Nearly three-quarters of the California groups are organized as partnerships —12 having partners only and 25 employing other physicians as well. Eleven groups are organized s single physician owner with employed physicians. In only three groups are all physicians employed by a

TABLE 2.—*Size of Groups—California 1950*

Size of Group (in Number of Full-Time Physicians in Group)	Groups		Physicians					
			Total		Full-time		Part-time	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
All groups	52	100	849	100.0	634	100.0	215	100.0
3-5	21	40	159	18.7	84	13.3	75	34.8
6-10	20	38	270	31.8	160	25.2	110	51.2
11-20	5	10	73	8.6	67	10.6	6	2.8
21 and over	6	12	347	40.9	323	51.0	24	11.2

Percentages do not add up to 100 because of rounding.

sponsoring organization. Table 3 presents the full distribution. This pattern is similar to that reported for the nation as a whole.[8]

Size of community. Although very few groups (5, or 10 per cent) are in rural communities, there is a fairly even distribution of groups in small, medium-sized and large cities (Table 4). Many of these small cities, however, are actually suburbs of metropolitan centers. The fact that the big city groups are also the largest means that the great majority of group physicians (73 per cent) are in metropolitan areas. When part-time physicians are eliminated from the analysis, however, there results a much more even distribution of full-time physicians among the small and large cities.

In contrast, the national pattern shows a greater proportion of groups in rural and small town communities, and fewer in the large cities.[8] In general, California group practice is a metropolitan phenomenon, while the characteristic national site is the small city.

Interrelated factors. No striking correlation exists between the size of the group and the size of the community — although only one group with more than eleven full-time physicians is located in a community of less than 25,000 population. In the nation as a whole, however, there is a definite tendency for small groups to be in small communities and large in large.[8]

There is similarly no close relationship between size and age of group in California—although in the national pattern the older groups tend to be the larger as well.[3]

Considering the factors of size of community and age of groups, there is some slight evidence that the older units are located in the larger communities. This is true also for the nation as a whole.[3]

The size of the group bears definite relationship to the form of group organization. The larger groups tend to be predominantly organized as partnerships with additional employed physicians, while the smaller groups rely more upon the single physician owner and the partnership-only forms. This is equally true for the United States as a whole.[2]

The form of organization does not seem to be related to either the age of the group or the size of the community.

TABLE 3.—*Form of Group Organization—California 1950*

Form of Group Organization	Groups Number	Groups Per Cent	Physicians Number	Physicians Per Cent
All forms	52	100	849	100.0
Partnership plus employed physicians	25	48	567	66.9
Partnership only	12	23	75	8.8
Single physician owner plus employed physicians	11	21	98	11.5
All physicians employed by sponsoring organization	3	6	101	11.9
Other*	1	2	8	0.9

*Questionnaire data not clear.

TABLE 4.—*Distribution of Groups and Physicians by Size of Community—California 1950*

Size of Community	Groups Number	Groups Per Cent	Physicians Number	Physicians Per Cent
All communities	52	100	849	100.0
Under 5,000	1	2	5	0.6
5,000 - 9,999	4	8	35	4.1
10,000 - 24,999	12	23	83	9.8
25,000 - 99,999	15	29	183	21.6
100,000 - 499,999	10	19	287	33.8
500,000 and over	10	19	256	30.2

Percentages do not add to 100 because of rounding.

Prepayment Characteristics of the Groups

While almost all the groups care for patients enrolled in the various medical insurance plans operating in the state, there are ten which operate their own plan as an integral part of the group organization. These groups tend to be very much larger and more urban than those providing private fee services only. The prepayment groups are also more commonly organized by a sponsoring organization, more frequently are designed as partnerships with employed physicians, and tend to provide a broader array of medical and technical services. The mean size of California prepayment groups is 30.8 full-time physicians, as compared with only 7.8 for all others in the state and 11.1 for the nation as a whole.[8] The over-all proportion of groups with their own prepayment plan is similar for the state (19 per cent) and the nation (15 per cent), although over half of all physicians in California are in prepayment groups as compared with only 20 per cent for the United States (see Table 5).

Hospital Relationships

Eight, or 15 per cent, of the total number of groups in California operated their own hospital in 1950. Another 22, or 42 per cent, have a group affiliation with at least one hospital in the community. This compares with the national figure of 32 per cent of all groups having their "own hospital."[8] (Whether this means ownership or unit affiliation is not clear in the United States study.)

TABLE 5.—*Distribution of Groups, and Physicians in Groups, With and Without Prepayment Plan—California 1950*

Operation of Prepayment Plan	Groups Number	Groups Per Cent	Physicians Total Number	Physicians Total Per Cent	Physicians Full-time Number	Physicians Full-time Per Cent	Physicians Part-time Number	Physicians Part-time Per Cent
All groups	52	100	849	100.0	634	100.0	215	100.0
Groups with own prepayment plan	10	19	483	56.8	308	48.6	175	81.4
Groups without prepayment plan	42	81	366	43.2	326	51.4	40	18.6

TABLE 6.—*Occurrence of Medical Specialties—California 1950*

Medical Specialty	Groups Having Each Specialty (Total of 52 Groups) Number	Per Cent
Surgery	48	92
Internal medicine	45	87
Obstetrics-gynecology	44	85
Radiology	32	62
Pediatrics	31	60
Ear, nose, and throat	30	58
Eye	22	43
Orthopedics	22	43
Urology	22	43
Neurology-psychiatry	12	24
Dermatology	11	22
Pathology	10	20
General practice	6	12
Other*	8	16

*"Other" includes the following: Allergy, 3 groups; Industrial medicine, 3 groups; Neurosurgery, 2 groups; Endocrinology, 2 groups; Aviation medicine, 1 group; Proctology, 1 group.

Four of the ten California prepayment groups operate their own hospital, while another three are affiliated as a group with a local facility.

Group-owned hospitals range in size from 15 to 300 beds, although one large state-wide group operates a network of hospitals now totaling about 500 beds. The United States range in 1946 was 6 to 350 beds, with a median of 48.[8]

Services Provided by the Groups

Medical specialties. Table 6 indicates that the specialties of surgery, internal medicine and obstetrics-gynecology appear to be basic to any group, with radiology and pediatrics commonly offered as well. The larger groups reported a wider array of specialties than did the small units, although dermatology and pathology were rare in all groups. About one-third of all full-time physicians in California group practice are certified as specialists by the American Boards. The national survey reported a greater amount of specialty service than is indicated in the figures for California.[2]

Preventive services. Regardless of size, most California groups reported that immunization, routine laboratory screening tests and periodic physical examinations are offered to their patients. But the organized types of preventive service—child health conferences, health education, and the like—are offered rarely, and then only by the larger organizations.

Auxiliary technical services. Basic laboratory services are rendered by most groups, while physical therapy is included by three-quarters of the groups. Other auxiliary services are relatively rare, and vary directly in rate of occurrence with the size of the group. Dietetic instruction is provided by less than 40 per cent of all groups, and less than 40 per cent have a pharmacy operating in association with them.

Administrative and library personnel. Most of the groups (89 per cent) have a full-time business manager, while only 56 per cent reported a full-time medical director. Only 23 per cent maintain the services of a record-room librarian. This closely reflects the national pattern reported in 1946.[8] Again, most of the groups having such personnel are the larger ones.

Ratios of full-time personnel. The total number of full-time nurses in California groups (881) constitutes a ratio of 1.4 per physician. Groups with their own hospital, however, reported 2.8 nurses per physician, as compared with a ratio of 0.9 for clinics only. These figures are higher than the ratio of 0.55 nurses per physician reported in 1946 for the United States as a whole.[8]

The total of 238 technicians provides a ratio of 0.4 per full-time physician, again with a slightly higher ratio for groups owning hospitals. Administrative and clerical personnel occur in a ratio of 1.3 per full-time physician (2.1 for groups with hospitals and 1.2 for groups without). An over-all total of 2,798 full-time personnel was reported by the 52 groups.

Methods of Practice and Administration

Initial choice of physician. In two-thirds of the California groups, the patient himself determines the physician to whom he is initially referred. In the remaining one-third, this decision is made by a nurse or clerical receptionist. None of the groups appear to use a physician for initial evaluation. In the prepayment groups, 80 per cent accept the patient's initial self-referral.

Patient-physician relationship. In about one-half of the groups in the state, one physician assumes centrol control of the patient's care throughout all episodes of illness and refers to the various specialists as indicated. In the other half, patients are directed at once to the specialist indicated by the chief complaint in each episode of illness. The smaller groups, however, use the central physician method much more commonly (67 per cent of these groups), while five of the six very large units refer patients directly to the indicated specialist.

Medical records. Almost all (90 per cent) of the groups reported that all medical records for each patient are kept in a single folder, and (in all but one case) this folder accompanies the patient throughout the various services of the group.

Billing of patients. In about one-half the groups, the patient is billed by the group as a unit, and the total charge reflects the number of referrals or consultations by different group physicians. In the other half of the groups, the patient is billed by the group as a unit (unit billing is implied in the criteria of group practice), but without regard to the number of intragroup referrals or consultations. Among this latter group, of course, are the ten prepayment organizations whose premium charges obviously do not relate to volume of service rendered the individual patient. Considering only the private fee groups, therefore, more use the former method (25 groups) than the single fee system (17 groups). The system of billing was found to bear no consistent relationship either to size of group or to form of group organization.

TABLE 7.—*Methods of Remuneration of Physicians in Group Practice—California 1950*

Methods of Remuneration	Physicians Number		Physicians Per Cent	
All methods		849		100.0
Salary (alone, or in combination)		712		84.0
Salary only	472		55.7	
Salary, plus bonus or percentage of net profit	240		28.3	
Percentage of net profit, only		63		7.4
Individual fees for service (alone, or in combination)		74		8.6
Individual fees for service, only	66		7.7	
Individual fees for service plus percentage of net profit	8		0.9	

Methods of remuneration of physicians. The great majority of physicians in group practice in California receive partially or entirely a salary form of income (Table 7). Over half have a straight salary, while another quarter receive a bonus or percentage of net profit in addition. The remaining minority are divided about evenly between percentage of net profit only and individual fees for service.

Payment methods are closely related to form of organization. Partnerships which employ other physicians emphasize the salary method, while the majority of partnership-only groups base incomes on the percentage of net earnings or on the individual fee method. Physicians employed by a single physician-owner are much more likely to receive a bonus or other additional income than are those employed by an outside organization.

Criteria of remuneration of physicians. The most common criterion reported was the owner or partner status of the physician (61 per cent of groups). About half consider training, accreditation, experience and professional status. More than one-third of the groups consider seniority in the organization. A relatively small number take into account the amount of service rendered or the number of patients brought into the group. The experience in the nation as a whole is similar,[2] and thus the emphasis in group practice is more on professional criteria and less on volume of work performed. This is particularly noted in the larger groups and in those with their own prepayment plans.

Physician welfare. All groups report various benefits specially organized for physicians. Ninety-eight per cent provide for vacations (92 per cent with pay), 96 per cent allow for rotation of on-duty status, 84 per cent provide sick leave, and 82 per cent allow attendance at medical conventions (although only 40 per cent pay their members' expenses at such conventions). Commonly included also are staff educational programs (71 per cent), leave of absence for postgraduate study (53 per cent), and professional travel or mileage expenses (39 per cent). An organized retirement plan is reported by only 20 per cent of the groups as against 32 per cent of 22 groups studied throughout the nation in 1947.[4] Again, the larger groups appear to provide such benefits more commonly than do the smaller ones.

Research. Twenty-two, or 42 per cent, of the groups provide facilities for medical research. Sixteen of these groups include in their budgets items for equipment and expenses for research. In 1950, nine of the groups had received outside gifts or grants for their research studies.

COMMENT

A few generalizations emerge from the mass of data. The 52 medical groups in California in 1950 involve a significant segment of the medical profession of the state—and represent a growing trend. In contrast with the national pattern, the California groups are younger, larger, more urban, and more commonly associated with hospitals and prepayment plans. The four very large groups in the state tend to dominate the statistical picture, and determine the most characteristic aspects of the California pattern.

The relative stability and long history of the medical groups is significant, as is the rate of formation of groups in the postwar years. These newer groups, interestingly enough, tend to be smaller and less urban than the general pattern. As in the rest of the country, the salary method of payment and the private partnership form of organization predominate, especially in the large and prepayment groups.

Weaknesses

The data as reported indicate a definite gap between the promise and the practice of group medicine. This is reflected in various aspects of group organization and function.

A basic theoretical advantage of group practice is the coordination of complex modern medical services for the individual patient—or even better, the individual family. This calls for a nucleus of broadly oriented general physicians who function as personal health counsellors, calling upon and coordinating the specialty consultants as indicated in each case. Thus, central patient responsibility and continuity of patient care can be combined with the full array of specialist and technical service.

This survey reveals that most groups in the state are organized by specialists, that at least half assign the patient directly to a specialty department for each episode of illness, and that either the patient or a receptionist decides upon this initial selection of specialist. This "fragmentation" process—a basic characteristic of medical practice in America today — appears more commonly in the larger urban groups than in the less complex organizations.

In some groups, practical barriers still exist to the intragroup referral of patients—supposedly a functional essence of one type of group practice. In half the groups studied, the patient pays additional charges for each referral, and almost one-third of groups base payments to physicians at least partially on the number of patients handled by each individual physician. In the prepayment groups the physician and the patient may avoid economic deterrents, which exist in certain plans, to intragroup referral.

Group practice has an unusual potential for preventive medicine, since the team of trained personnel in group medical centers has greater facilities for the special techniques of prevention than does the solo practitioner. The data show, however, that relatively little emphasis is given by California groups to the planning of organized preventive services—although the individual techniques (immunization, health examination, etc.) are commonly reported. A related observation is the relatively rare employment of such auxiliary personnel as public health nurses, social workers, nutritionists, health educators, etc., who could immeasurably enhance the preventive program, while increasing the quality and economy of the over-all group service.

A final comment relates to the persistence of elements of economic competition among physicians in a group. An important advantage of one form of group practice lies in the elimination of professional competition and its replacement with cooperation and financial sharing. While this *is* true of a considerable portion of California groups, there remain significant differences among the units studied. In some of the groups, the individual physician benefits financially by retaining rather than referring the patient and competes with his colleagues in terms of volume of service rendered. The over-all income of the unit reflects the total number of visits and operations in all but the prepayment groups. A few of the groups still reimburse physicians according to the number of individual services rendered to each patient.

Advantages

To a considerable degree the theoretical advantages of group practice are demonstrated in the California experience. Almost all of the groups maintain their own coordinated medical center for the efficiency of physicians and the convenience of patients. Over half are able to maintain group practice in the hospital as well.

The administrative arrangements that constitute group practice free physicians from business dealings with patients, guarantee them a secure and steady income, provide comprehensive clinical facilities and auxiliary personnel, make possible ready consultation and referral relationships, provide a regular schedule of duty and free time, and present special educational and research opportunities.

In general, the groups bring together a fairly broad array of specialists and auxiliary personnel and provide basic laboratory and other technical facilities, thus enhancing the potential for scientific practice and for comprehensive service to patients.

The personal advantages to physicians—in terms of economic security, vacations and sick leave arrangements, travel subsidies, etc., are well demonstrated. The stability and growth of older groups and the appearance of new ones testify to the attractiveness of the general arrangements to many physicians.

A highly significant impact of the medical groups on professional practice in the state is the shift in them away from the traditional pattern of individual fees for each item of service rendered, to the group method of guaranteed income with sharing of net surplus based upon professional qualifications.

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REFERENCES

1. American Medical Association, Bureau of Medical Economic Research: An Annotated Bibliography of Group Practice, Bulletin 85, The Association, Chicago, 1951.

2. Goldstein, M. S.: Medical Group Practice in the United States, IV. Organization and Administrative Practices (reprinted with additions), J.A.M.A., 136:857-861, March 27, 1948.

3. Goldstein, M.S.: Medical Group Practice in the United States, V. Growth of Groups, Journal-Lancet, 69:42-46, Feb. 1949.

4. Goldstein, M. S.: Medical Group Practice in the United States, VI. Income of Physicians (reprinted with additions), J.A.M.A., 142:1049-1052, April 8, 1950.

5. Hunt, G. H.: Medical Group Practice in the United States, I. Introduction, New England J. Med., 237:71-77, July 17, 1947.

6. Hunt, G. H.: Medical Groups in the United States, 1946, Public Health Service, Washington, 1949 (second printing).

7. Hunt, G. H., and Goldstein, M.: Medical Group Practice in the United States, II. Survey of Five Groups in New England and the Middle Atlantic States, New Eng. J. Med., 237:719-731, Nov. 13, 1947.

8. Hunt, G. H., and Goldstein, M. S.: Medical Group Practice in the United States, III. Report of a Questionnaire Survey of All Listed Groups, 1946 (reprinted with additions), J.A.M.A., 135:904-909, Dec. 6, 1947.

9. Lueth, H. C.: Economic Aspects of Future Medical Practice, J.A.M.A., 128:528-529, June 16, 1945.

Conservative Amputation in Arteriosclerosis Obliterans

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SUMMARY

Sixty-three toe and leg amputations in patients with arteriosclerosis obliterans were reviewed in an attempt to determine how often and under what conditions a toe or leg amputation gave satisfactory results, and when transmetatarsal amputation might better have been considered. In many cases in which toes were amputated, it was necessary later to amputate the leg or the thigh because of improper healing or spread of infection. Transmetatarsal amputations apparently heal frequently in carefully selected cases and permit better function in the foot than do toe amputations. Successful use of a prosthesis is not obtained in many cases after leg amputation. When this difficulty is anticipated transmetatarsal rather than leg amputation should be attempted, if other conditions warrant, since prosthesis is not necessary after transmetatarsal amputation.

McKITTRICK and co-workers[3] recently reported encouraging results from transmetatarsal amputation in patients who had both arteriosclerosis obliterans and diabetes mellitus. They stated that patients who formerly would have been subjected to amputation of one or more toes or even of part of the leg received more benefit from the transmetatarsal operation.

To appraise the conclusion reached by McKittrick and co-workers, a study was made of case records with a view to determining, first, how often and in what circumstances toe or leg amputation gave satisfactory results, and, second, whether transmetatarsal amputation might better have been considered.

REVIEW OF CASES

At Los Angeles County Hospital histories were reviewed of 49 unselected cases of patients with arteriosclerosis obliterans, some of them with diabetes mellitus, upon whom amputation of a toe or toes or through the leg had been performed because of a lesion related to ischemia. A total of 63 amputations had been done on 57 limbs. Ages of the patients at the time of amputation ranged from 40 to 82 years; the average was 63 years. Thirty-two were men and 17 women. Of the 57 limbs that were operated upon, 43 were those of patients who had diabetes mellitus. One patient who underwent amputation on both limbs had had Raynaud's phenomenon for many years in addition to arteriosclerosis obliterans. All the amputations were performed at least three and one-half years before the study here reported, an interval adequate for follow-up.

One or more of the toes were removed in 30 of the amputations and part of the leg in 33. After 21 of the toe amputations a subsequent amputation to the leg or thigh was carried out (six of these operations are included in the 33) because healing did not progress notably in one or two months or because of spreading infection. In three instances the patient died after the second amputation.

Healing took place after only nine (30 per cent) of the toe amputations (Table 1), and was usually slow. In many instances considerable distortion of the remaining toes occurred after operation, and in most such instances callus and ulceration developed on the metatarsal heads, on the outer aspects of the first or fifth toes, or on the toes adjoining the amputation site. Removal of the great toe did not appear to cause the patient great difficulty in balancing or in stepping forward to walk. The over-all impression of results from toe amputation was not encouraging, even when allowance was made for the greater age and poor general condition[1] which commonly are factors in patients in charity hospitals.

Healing occurred in 24 of the 33 cases in which amputation through a leg was carried out, and it was much more rapid than after toe amputations. In the other nine cases the patient either died postoperatively or later underwent thigh amputation. Of the 24 patients with amputations that healed, nine did not use prosthesis, and of the 15 who did, only four continued use of the device for a year or more. Some of the patients who did not use a prosthesis for a full year probably could have done so. Eight of those who did not use a prosthetic device at all or abandoned its use within the first year, nevertheless seemed to benefit from the amputation, for they had greater use of the limb (as in turning in bed or sitting) than they could have had after amputation through the thigh. Among the reasons for abandoning or not using a prosthesis were these: The patient found crutches satisfactory; the patient died of other causes in the year after the prosthesis was applied; the prosthesis was difficult

TABLE 1.—*Amputation in Arteriosclerosis Obliterans.*

	Total Number	Healed	Reamputated	Died
Toe	30	9 (30%)	21	3*
Leg	33	24 (73%)	5	4

*All died after reamputation.

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TABLE 2.—*Use of Prosthesis in Leg Amputation*

Number Successfully Amputated	Used prosthesis for over one year	Could not use prosthesis	Use of prosthesis conditional or uncertain
24	4	9	11*

*These 11 benefited somewhat from the leg amputation (as opposed to a thigh amputation) even though they did not use a prosthesis for at least one year.

to use because the other limb also had or needed a prosthesis; pressure of the prosthesis caused recurrent ulcers; or contracture of the knee developed. The subsequent use of the limb upon which operation is done is important because most of the patients were alive two to ten years after amputation.

Death followed amputations in seven cases, in four of which amputation of the leg was carried out, and in the other three amputation of a toe or toes, followed by amputation of the thigh (during the same hospitalization) when that became necessary because of spreading infection in one case and non-healing in two. In all seven cases death was related to cardiovascular disease and/or sepsis.

DISCUSSION

In the present group of elderly patients with arteriosclerosis obliterans, many with diabetes mellitus, toe amputations usually did not heal. McKittrick in 1939 reported healing in only ten per cent of such cases.[2] His advice at the time was the performance of thigh (supracondylar) amputations in a greater number of cases. However, in light of his more recent experience with transmetatarsal amputation it would appear that this operation might well be tried more often instead of toe amputation if local conditions are conducive to technical success and if arterial insufficiency in the patient is only moderate.

In the cases studied, neither sex, age, the presence of diabetes, nor the palpability of the arterial pulses *alone* appeared to be correlated with the success of the amputation. Apparently in the selection of the site for amputation no one of these indices can take the place of an adequate survey of the degree of arterial insufficiency present as measured by arterial pulses, claudication distance, pallor of the limb when elevated and rubor when dependent, appearance of the skin, speed of color return (venous filling time), ischemic pain on rest, and the implication of any trauma in the production of the lesion.*

The evidence presented concerning the healing and usefulness of the limb after amputation of the leg suggests that transmetatarsal amputation might well be tried in place of leg amputation in some cases, especially in those in which it is suspected that the patient will not be able to wear a prosthetic device. As transmetatarsal amputation makes greater demands on the peripheral circulation, careful appraisal of the adequacy of the supply of blood must be made, since unsuccessful amputation and consequent reamputation would entail a greater risk in a condition already associated with a high rate of operative mortality. The advantage of transmetatarsal amputation over amputation of the leg is that if healing takes place the limb can still bear weight without a prosthesis. This advantage sometimes makes the difference between an ambulatory and a partially invalid patient.

REFERENCES

1. Flasher, J.: Some vascular considerations in the treatment of arteriosclerosis obliterans, Angiology, 3:53, Feb. 1952.

2. McKittrick, L. S.: Chronic obliterative vascular disease, J.A.M.A., 113:1223, Sept. 23, 1939.

3. McKittrick, L. S., McKittrick, J. B. and Risley, T. S.: Transmetatarsal amputation for infection or gangrene in patients with diabetes mellitus, Ann. Surg., 130:826, Oct. 1949.

4. Samuels, S. S.: Management of Peripheral Arterial Diseases, Oxford Univ. Press, New York, p. 203, 1950.

*It must not be forgotten that, as Samuels[4] has amply illustrated, many lesions of the toes can heal without surgical amputation if ideal conditions of treatment prevail, although the prolonged hospitalization or bed rest required and the financial considerations involved might make such therapy impracticable.

The Relationship of the Referring Physician to the Psychiatrist

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SUMMARY

The relationship of the referring physician to the psychiatrist is believed to be of a different order than that of most physicians to one another. Certain facts are postulated as playing a role in this somewhat difficult relationship and examples from actual practice are offered as evidence. Among possible points of discord are mentioned: The length and cost of psychotherapy and relative youth of the specialty, the referring physician's hostile feelings toward it, and the unhelpful attitude of certain psychiatrists.

OFTENTIMES a physician, in referring a patient to a psychiatrist, seems to have difficulty that he would not have if he were referring to a colleague in another specialty. It seems also that if the psychiatrist is a psychoanalyst or one who does not practice neurology (often a convenient pretense for referral) the difficulty is increased. A psychiatrist may interview a patient, referred because of headache, tremor, fatigue or even "nervousness," who has been directed by the referring physician to see Dr. Smith to have his "nerves checked up." And the patient, becoming indignant when the psychiatrist starts questioning him about his emotional problems, may say: "Dr. Jones sent me here for an examination." That this situation is in many instances the fault of the referring physician (and not just the patient's delicate feelings) is clear from the fact that a psychiatrist may get consistently well-managed referrals from certain physicians.

Physicians are as a rule well aware that they live perpetually in the shadow of their own ignorance; and, having the welfare of the patient at heart, they welcome special or additional knowledge from a colleague. Why, then, can a specific referral, namely, to a psychiatrist, be difficult? The reply to this question most often obtained from the referring physician is that it is so difficult a matter to broach—that the patient will feel the physician is implying he is crazy. Next most common, in the author's experience, is the answer that when the idea of seeing a psychiatrist was brought up, the patient refused it. Consider some examples:

A woman, 29 years of age, was referred by an internist because of tremor of the hands. The patient had been examined by a number of physicians during the previous years, had been thought to have disease of the thyroid gland, and had been given many forms of medication. When the psychiatrist started to question her about her symptoms and about the feelings related to them, the patient became actively hostile. She stated that she had seen some wonderful doctors in the last year, that nobody had told her that hers was an emotional problem, and that she was sure the doctors felt it was her "glands." On further questioning, she revealed that she was frightened and discouraged by the symptoms since they had not responded to treatment and had increased to the extent that she could not competently perform her work. She further stated that if hers was an emotional symptom she would handle it herself, and concluded the interview a short time later, rather abruptly, in tears.

A 29-year-old man consulted an internist because of pain in the right lower quadrant of the abdomen. The internist took a careful history and made a thorough physical examination. He noted that the colon was rather tender throughout. He informed the patient that this was probably attributable to emotional tension, but that he felt that radiologic examination with barium enema should be carried out in order to rule out other possibilities. No abnormalities were noted in the roentgen studies. The patient was so informed and was referred to a psychiatrist immediately. He came to the psychiatrist with the statement that the internist had ruled out the possibility of physical disease, that he was relieved to know it, and that there were reasons in his life for the emotional disturbance that might be manifest in colonic tenderness. The patient had weekly interviews for eleven weeks and during that time the symptom disappeared. It was necessary to discontinue treatment, as he was leaving for another part of the country. However, the patient expressed interest in getting long-term help for several other things he had noticed about himself, when he could afford it.

Dr. A., the physician who referred the patient in the first of the two cases reported as examples, is an overworked internist who additionally burdens himself by supporting a large number of severely neurotic persons with various drugs and reassurances that chronically tie patients to him. The occasional patient he sends for psychiatric interview is usually a hostile, aggressive person with whom Dr. A. expects the psychiatrist to accomplish miracles in one interview. As a result, Dr. A. earnestly believes that psychiatrists are of no help to him.

Dr. B. who referred the young man with the spastic colon is an excellently trained internist who himself received psychiatric help for an emotional upset that occurred during the course of his residency. The patients he refers to the psychiatrist are usually less apprehensive and better informed about what they can expect of the consultation.

On the other hand a physician may refer a patient to a psychiatrist and be disappointed in the outcome for a number of reasons. Consider the following:

A general practitioner referred a man 24 years of age to a psychiatrist because of a diagnostic problem involving head-

aches. The psychiatrist in an hour-long interview informed the patient that the headaches were owing to "repressed hostility," and that he needed a number of interviews to work out hatred toward his mother. The patient did not return to the referring physician, who next heard of the case when the patient's indignant mother phoned to upbraid him for sending her son to someone who was encouraging him to "wreck their home." In addition, the referring physician learned that the psychiatrist charged $15 for the interview, whereas he himself had charged only for laboratory studies because of the family's financial status.

Dr. C., a psychiatrist, receives referrals from a number of physicians, at least in part because he is one of the few psychiatrists in the area. His fees seem overly large to his colleagues, he rarely discusses his findings with the referring physician, and his letters are replete with psychiatric jargon. After a number of visits to his office, the patients seem to find their way back to the referring physician. Dr. C. earnestly believes that the physicians in his area are not psychiatrically oriented.

It would seem that certain unrealistic attitudes and preconceived notions on the part of the referring physician and the psychiatrist make for difficulties between them. These difficulties are obviously exaggerated when either of them has personality difficulties that make collaboration impossible, or when the referring physician has a negative attitude toward psychiatry and psychoanalysis. In one group of referrals, three physicians referred seven patients ostensibly for neurological examination, and in none of the seven was neurological disease noted. On the other hand, two physicians referred six patients for psychotherapy and four of the six agreed to undergo psychotherapy including one who began psychoanalytic therapy.

The complaints about psychiatric referrals made by referring physicians seem to fall into the following categories: (1) Psychiatrists want to do too much, and therefore psychotherapy takes too long. (2) Psychotherapy is too expensive. (3) The results of treatment are poor. (4) Psychotherapy encourages patients to become too dependent on the therapist and to feel "sorry for themselves." (5) Psychiatrists are crazy or peculiar themselves. (6) Psychoanalytic theory is a lot of jargon—"especially the stuff about sex." It would perhaps be worthwhile to consider each criticism separately.

1. *Psychotherapy takes too long.*

The natural history of medicine has been one of increase in specialization. The more that is discovered, the more arborized become the pathways of discovery. Hence it is not surprising that the fifty or so years of increasing interest in psychiatric treatment has increased realization of the complexity of the human mind and has increased awareness of the kind and extent of required intervention. It is recognized that at present there are no short-cuts to effecting durable relief to someone with severe difficulties in living. No amount of wishful thinking, zealous shoulder-patting or exhortations to improve will more than scratch the surface of neurotic processes. Physicians do not feel defeated or frustrated because a patient with chronic rheumatic heart disease remains under continuing treatment the rest of his life. Why, then, should there be a double standard with regard to people who are emotionally upset—be they neurotic, psychotic, or otherwise?

Consider the remark of an eminent medical teacher: "I want you to meet Dr. X., our new psychiatrist. He is a very good man; he doesn't go too far with his patients." This is not to say how far he does go, but implies there is a tendency on the part of psychiatrists to go "too far." How far is that? Suppose that, instead of a psychiatrist, it was a surgeon who was being presented and that it was said of him that he was a good man because he judiciously confined himself to matters outside the dark and mysterious realm of the peritoneal cavity.

2. *Psychotherapy is too expensive.*

A psychiatric interview on the average must last nearly an hour. This means that the psychiatrist cannot treat more than seven or eight patients a day, especially if he is to remain alert and intuitive. It is apparent he must charge proportionately greater fees per patient in order to compensate for the lack of volume. Statistics released by the sixth economic survey of *Medical Economics* in May 1949 revealed that psychiatrists have less gross income than most other specialists. In addition, it must be remembered that the training of a psychoanalyst takes longer and costs more than does the training of any other specialist. Oddly, the ability to do psychotherapy requires the most extensive training, yet is less remunerative to psychiatrists than shock treatment, consultations, etc.

3. *The results of psychotherapy are poor.*

A statistical survey of the results of psychiatric treatment cannot be presented simply. This is because results depend to a large measure on the skill of the therapist (hence differing from the treatment of infectious diseases with penicillin, where the therapeutic agent is of prime importance), on the amount of time spent with any one patient (from one interview to interviews over several years), and on the degree of disorganization of the patient's interpersonal processes. A psychiatrist relies on the ego strength of the individual and his drive toward mental health to aid the therapeutic efforts. With some patients the psychic processes could be compared to exhausted bone marrow that can no longer mobilize leukocytes to aid the physician in the fight against infection. It would seem, in general, that individuals become mentally ill as a result of unfortunate experience. There is no theoretical reason to indicate that judicious psychotherapy should not be a fortunate experience. This is in contrast to the "better let well enough alone" attitude so often expressed in reference to emotionally ill people.

4. *Psychotherapy encourages patients to feel sorry for themselves.*

It seems to be difficult for most persons in our culture to give credence to the idea that the individual does the best he can at any given moment. Why should it be otherwise, when we all would rather be comfortable than in distress? The terms "lazy,"

"stubborn," "no will power" are not merely descriptive but imply moral censure and an unspoken "he could do better if he wanted to." Hence, a psychiatrist is up against social prejudice when he attempts to point out that certain dynamic interpersonal processes over which the individual has no control are responsible for his character traits. When the individual becomes aware of his dealings with others he adopts more healthy patterns. This is not to say that individual psychiatrists may not encourage patients to become dependent upon them (for various reasons—including prestige, power, financial gain or the physician's despair). It is to say, however, that there is nothing in the psychiatric process that makes such dependence necessary.

5. *Psychiatrists are crazy or peculiar themselves.*

The abundant jokes about psychiatrists are ample evidence that many people in our culture are afraid of their unconscious feelings and hence resent and fear psychiatry and psychiatrists as though they were mind readers. It is natural for them to attempt to dilute this fear by finding flaws in those of whom they are in awe. In addition, psychiatrists like other physicians have emotional reasons for choosing their particular specialty. As in any young science that is fighting for recognition, there are many radicals and reformers among the early proponents, many whose emotional problems make them zealots. Many psychiatrists also attempt to solve their own problems by treating patients. As the field has gained greater acceptance in recent years, the number of relatively stable young men entering it has increased.

6. *Psychoanalytic theory is a lot of nonsense.*

The average physician who sits down and reads a treatise on psychoanalysis is generally more incredulous than curious. He does not treat it with the same respect an equally incomprehensible article on neurophysiology would receive. Perhaps a partial reason is that although few of us would claim to be or expect ourselves to be, experts in many of the various facets of medicine, most of us claim to know a good deal about human motivation and behavior —and especially about ourselves! In addition, we have some carry-over of our childhood days in our feelings of curiosity and disgust toward sexual matters, and in our fear of the unknown, the unfamiliar. It is interesting that the most eloquent and vociferous denunciators of psychoanalytic theory are, in general, those physicians who practice no systematic psychotherapy — who never, therefore, put themselves in the position of discovering whether or not certain of the tenets may be supported. In addition, psychoanalysts may interview a patient several hundred hours; therefore, they reach a depth of psychic material that cannot be judged in terms of meeting with a patient a few times. It is equally true that psychiatrists and psychoanalysts should mend their ways if they would have greater acceptance by other physicians. In the last few years there has been a real attempt on their part to "clean house"—especially in regard to their mysterious and incomprehensible language. They also would do well to regard with curiosity and skepticism the universality and absolute veracity of some of their claims.

All the foregoing factors are operating when a physician refers a patient to a psychiatrist. Perhaps another example from actual practice would further this point:

A woman was hospitalized for ulcerative colitis. After life-saving medical treatment she was referred for psychiatric consultation, and it was decided she should undergo psychotherapy after leaving the hospital. After a year of therapy (one-hour interviews twice a week) she was having diarrhea only once or twice a week and an internist examined her occasionally. She was receiving vitamins and ferrous sulfate, no other medications. At this point the patient became pregnant, and this precipitated another acute attack which did not respond to medical therapy including a prolonged course of streptomycin. The psychiatrist felt that the pregnancy brought out strong unconscious fears and resentment in the patient and that this was responsible for the sudden remission. The internist urged colostomy. In alarm, the patient's family turned to the psychiatrist who felt he could not interfere with the medical treatment, but persuaded the internist to call in consultation a leading authority on that disease. The consultant felt that psychotherapy was benefiting the patient and recommended it be continued. He stated that although the patient had slight anemia and was having six to eight bowel movements a day, her state of nutrition was good and there was no need at present for heroic measures such as colostomy. From then on relations between the internist and psychiatrist became increasingly difficult. The patient, although she needed medical supervision, stopped seeing the internist because he would in an oblique manner try to undermine her belief in the efficacy of the psychiatric treatment. He also attempted to persuade the patient and her husband to get her to take a two-week trial of chloramphenicol. The psychiatrist did not take time to talk the situation over with the internist at such length that he could convince the other physician of the rationale for psychotherapy. The situation was finally resolved when the patient returned to the specialist, who had been called in consultation, who in turn referred her to another internist in the area with whom the psychiatrist was able to work out a happier relationship.

It would seem, then, that a situation such as that described, which is not unusual between psychiatrist and referring physician, might be owing to a number of factors that are constantly operating between the two physicians. Psychiatry has only recently come of age, and the referring physician has great doubts as to its value and great expectations as to how quickly results should be forthcoming. His skepticism is only increased by his over-evaluation of the psychiatrist's ability. Psychiatrists have not done enough to explain their science without over- or under-selling it. Some psychiatrists who have not had much experience with psychotherapy overemphasize the value of the organic treatments (such as shock, or lobotomy) and increase the non-psychiatric physician's doubt of the benefits of psychotherapy. The reaction of the physician against psychotherapy may stem also from another source: all persons, and hence physicians too, fear exploration of that part of their mental processes which is out of their own awareness. Therefore, it is possible that the referring physician despite his reasonable self,

unconsciously fears and hence feels hostile toward psychiatry. Despite his conscious wish to help the patient, the physician may unconsciously be putting blocks in the way of referring his patients for emotional help, or may unconsciously be interfering with the psychotherapy once it is under way. If the psychiatrist, on his part, does not take this into account, and instead behaves as if the referring physician were simply being unreasonable, then the situation will become increasingly difficult and unworkable.

Experience in psychotherapy leads to at least one outstanding truth — that unreasonable fears and quiet doubts are subject to change once they come into awareness. It is possible that increasing frankness between the psychiatrist and his non-psychiatric brethren will result in expediting the welfare of the patient. To make use of an implication in discoveries of recent years of the interdependency of the psyche and the soma: the psychiatrist and the non-psychiatric physician must establish the same sort of homeostasis that they are attempting to establish in the patient.

Palo Alto Clinic.

Doctor Shortage?

Speaking before the President's Commission on the Health Needs of the Nation, Frank G. Dickinson, Ph.D., director of the Bureau of Medical Economic Research of the A.M.A., said that "there has not been to date a realistic study which supports any valid claim that a national doctor shortage is pending."

"Since people need everything," he said, "it can be safely assumed that there are unmet needs for medical services, legal services, dental services, Grade A milk, shoes, and any other goods or services which sell for a price. Since all needs are relative, it follows that all unmet needs are relative. Any approach to the study of regionalization will fail at the start if it is based upon the notion that unmet needs are absolute."

—From the American Medical Association's *Secretary's Letter*

Relationship of Delivery Date to Predicted Date

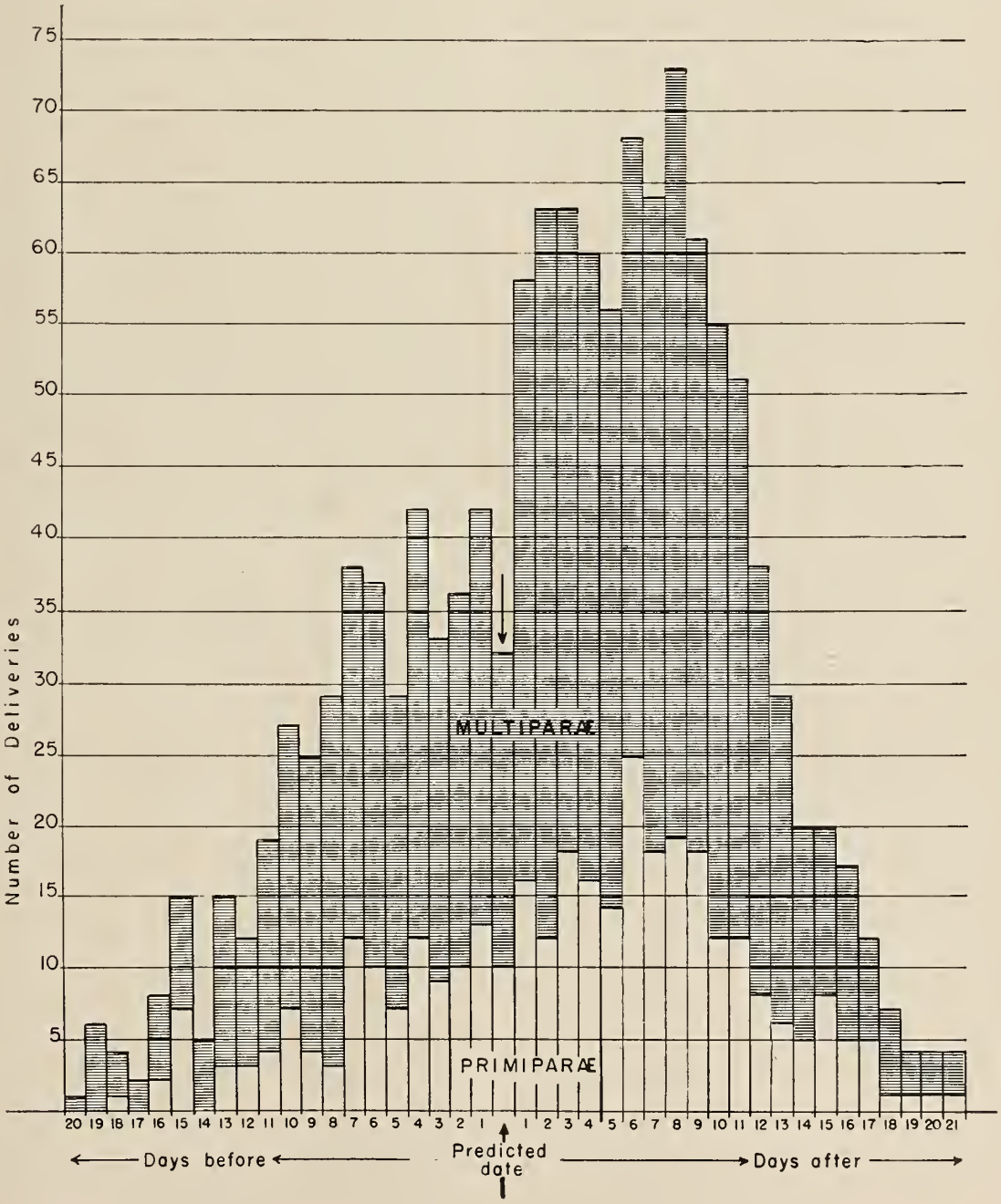
Edward Liston, M.D., *Palo Alto*

DATA on 1,300 consecutive deliveries at the Palo Alto Hospital in the period September 1950 to April 1951 were reviewed with regard to the actual delivery date in relation to the predicted date. The predicted date was 280 days after the first day of the last menstrual period.

Data on 1,284 cases are charted below. Delivery was early in 425 cases, late in 827, and on the predicted date in 32. Not on the chart are 16 cases in which delivery was more than 21 days early or late. More than three weeks early were two primiparae, five multiparae; more than three weeks late, three primiparae, six multiparae.

The data confirm a clinical impression that delivery is twice as likely to be late as early.

300 Homer Avenue.



Relation of a Streptococcus to Epidemic Poliomyelitis

Studies in Etiology, Diagnosis and Specific Treatment

EDWARD C. ROSENOW, M.D., *Cincinnati, Ohio*

SUMMARY

The production in 1915 of herpes zoster or "posterior" poliomyelitis in animals with a streptococcus led to further research on the etiologic importance of streptococci in "anterior" poliomyelitis.

A specific streptococcus was demonstrated consistently in persons with poliomyelitis and in well persons having contact with them or merely inhabiting an area in which poliomyelitis was epidemic. That the organism was not present in areas remote from contact with the disease was likewise demonstrated.

The streptococcus has been isolated from filtrates of poliomyelitis virus and from the tissues and exudates which harbor the virus. It appears in the spinal fluid in the preparalytic stage of poliomyelitis and disappears from the spinal fluid during the severe stage of the disease.

Antibody and antigen prepared from the streptococcus were used to determine the presence of antigen and antibody indicative of streptococcal infection in many patients with poliomyelitis and in well persons. The intensity of reaction indicating specific streptococcal antigen was directly proportional to the degree of paralysis in patients; the reaction was greater in persons whose age, sex and previous isolation from the disease would normally indicate greater susceptibility. The test for antibody gave opposite results.

Specific agglutinins for the streptococcus and neutralizing antibody for the virus were present consistently in the serum of persons and monkeys during recovery from poliomyelitis.

Virus produced in vitro from the associated streptococcus caused all the clinical and pathologic features of poliomyelitis in monkeys inoculated with it, and the animals that recovered from the disease thus induced were proved to be immune thereafter to the natural virus.

Antistreptococcic serum prepared in horses was used to treat poliomyelitis. In a group of monkeys inoculated with the virus of the disease, 6 per cent of those receiving the serum before inoculation died of the disease; of the control group, 82 per cent. In a series of poliomyelitis patients treated with the serum the mortality rate was 8 per cent; in a control series, 21 per cent. In a series treated in all stages of the disease by the author, 10 per cent died; of those who did not receive the serum, 25 per cent.

An antibody has been prepared from the streptococcus which appears to prevent paralysis and otherwise mitigate poliomyelitis and to provide immunization from the disease.

The conclusion is reached that the virus of poliomyelitis is a form of the specific streptococcus, which is the agent in primary infections and in the development of the immunizing antibody.

PROOF that epidemic poliomyelitis is caused by a filtrable agent currently considered to be a virus is complete. That the clinical and pathological features of poliomyelitis occur in monkeys inoculated cerebrally with emulsions and filtrates of emulsions of the spinal cord of persons who died of poliomyelitis, and that these features can be reproduced in rhesus monkeys throughout a series of brain-to-brain transmissions is established beyond peradventure.

The influence so often exerted by current concepts in determining the nature and course of original research is strikingly illustrated in studies on the inciting agent of this disease. Bacteriologic studies prior to 1909 indicated that certain diplostreptococci that were isolated might have significance in the etiology of poliomyelitis. These studies were quite naturally dropped when in that year it was learned that the causative agent is filtrable; in consequence, forthright bacteriologic studies have not been generally used for more than forty years.

During studies on elective localization of streptococci in 1915,[14] the author produced herpes zoster or "posterior" poliomyelitis in rabbits and dogs with a streptococcus isolated from the nasopharynx, tonsils and spinal fluid of humans.[1] This result led to the concept that a specific type of streptococcus might have etiologic importance in "anterior" poliomyelitis regardless of the filtrability of the causative agent and might indeed be the source of the filtrable agent.

From the Department of Bacteriologic Research, Mayo Foundation, Rochester, Minn., and Longview Hospital, Cincinnati, Ohio.

Presented before the Section on General Practice of the American Medical Association, San Francisco, June 28, 1950.

Opportunity to put this idea to test was presented in Rochester, Minnesota and New York City during the epidemic of 1916. Guinea pigs and rabbits were inoculated with the streptococcus isolated from the nasopharynx and spinal cord of persons who were ill with or had died of poliomyelitis. Flaccid paralysis (often fatal); atrophy and deforming contractures of muscles in animals that survived severe paralysis; death from respiratory failure; edema; hemorrhage and degeneration of nerve cells in the anterior horns of the spinal cord—the all-important occurrences in poliomyelitis—were produced in high incidence.[15] Such symptoms and lesions almost never occurred in animals inoculated with streptococci similarly isolated in studies of other diseases. In short, the specific streptococcus, when injected intravenously into animals, tended to localize electively and to cause systemic lesions like those occurring in patients from whom the organism was taken.[14] Mathers[6] and also Nuzum and Herzog,[8] using the same methods, reported similar results in studies of epidemic poliomyelitis in Chicago. The demonstration of pleomorphic cocci and diplostreptococci in the lesions of the spinal cord in poliomyelitis,[15, 1, 2, 16] the occurrence of streptococcal antibodies in convalescent serum,[16, 17, 18, 7, 4] and the production and use of antistreptococcic serum in treatment soon followed.[19, 20, 9]

Convinced of the epidemiologic and etiologic importance of the streptococcus, and recognizing that no practical means for specific prevention and treatment had resulted from the purely viral studies, the author continued making further streptococcal and viral studies of epidemic and experimentally produced poliomyelitis, as opportunity was afforded, from 1916 to the present. This research will be briefly reviewed with citations of the original publications in which the methods used are described. Corroborative results obtained by other investigators will be indicated. The reasons for omitting certain phases of the author's work are set forth in a monograph on poliomyelitis.[20]

I. *Isolation and Microscopic Demonstration of the Streptococcus in Poliomyelitis*

In seventeen epidemics studied, a specific type of nonhemolytic or green-producing, often pleomorphic, streptococcus was isolated consistently, by the special methods employed, from a number of significant sources: (a) from the very tissues and substances that harbor the virus, such as the nasopharynx and the feces of persons with the disease; (b) from the nasopharynx of persons who had had contact with others who had the disease, as well as from the nasopharynx of persons who had had no such contacts (and at the same time it was proved absent during winter in areas remote from epidemics of poliomyelitis); (c) from the spinal fluid, in the very early stages of the disease, of persons stricken during epidemics and of monkeys inoculated with the virus; (d) from the brain and spinal cord, after death, of victims of epidemics, and of rhesus monkeys and mice that had been inoculated with material containing the virus; (e) in significant incidence, from serial dilution cultures of the "bacteria-free" filtrates of highly potent virus.[20] The streptococci isolated from the nasopharynx of persons who had the disease, from the brain and spinal cord of persons who had died of epidemic poliomyelitis and of monkeys that died after inoculation of emulsions and filtrates of the virus, were remarkably alike in appearance, in staining reactions, in virulence, in electrophoretic velocity and in agglutinability. In general, the isolation of streptococci from emulsions and from filtrates of emulsions of brain and spinal cord of monkeys that died of poliomyelitis was accomplished with steadily diminishing frequency on successive transmissions. This was especially true in mice.

The streptococcus was proved absent from the spinal fluid of rhesus monkeys before inoculation of emulsions and filtrates of highly potent virus, and during the asymptomatic period of incubation, but as fever and other symptoms occurred the organism appeared in high incidence and in great numbers on microscopic examination of Gram-saffranin-stained films of centrifuged sediment. Cultures in freshly prepared dextrose-brain broth grew pure colonies in many instances as fever, tremors and staccato voice developed in the subjects after inoculation with different virus strains. The organism diminished in the spinal fluid or disappeared during severe paralysis but was observed in stained films of fluid from the edematous, hemorrhagic anterior horns of the spinal cord; it was isolated from the spinal cord and seen in the lesions, especially of the anterior horns, in monkeys killed by anesthesia after severe paralysis had occurred and in monkeys that died of respiratory failure from rapidly progressing paralysis.

In order to rule out the possibility of chance occurrence of unrelated streptococci or so-called secondary invaders in spinal fluid, the filtrate of the highly potent MV. strain of poliomyelitis virus, which had been transmitted through many monkeys over a period of years, was injected intracerebrally into fourteen monkeys immediately after spinal tap. Cultures of the filtrate of the virus in dextrose-brain broth yielded a pure growth of the streptococcus, whereas culture in dextrose broth and on blood-agar proved sterile. Microscopically examined, the sediment of the spinal fluid of all fourteen monkeys was seen to be free of cells and streptococci, and cultures in dextrose-brain broth produced no growth from spinal fluid extracted before inoculation or from that extracted 48 hours later when symptoms were absent and the temperature of all the animals was normal. At 96 hours, when fever, tremors and staccato voice (but not paralysis) had developed, the streptococcus and lymphocytes and polymorphonuclear leukocytes were readily found in the stained sediment, and pure growth of the streptococcus was isolated in dextrose-brain broth culture from each of the monkeys, while aerobic cultures on blood-agar remained sterile. Two days later, after severe paralysis had developed, the streptococcus was seen

microscopically in specimens from nine of the monkeys, and cultures from but four revealed streptococci. On the eighth day, streptococci were microscopically apparent in two monkeys, and cultures from all remained sterile. The streptococcus was isolated, in dextrose-brain broth, from the spinal cord of each monkey that died from rapidly progressing paralysis. All strains isolated from the spinal fluid were agglutinated specifically by the poliomyelitis antistreptococcus serum, and the distribution curve of cataphoretic velocity was bimodally neurotropic.

Gram-staining pleomorphic diplococci, sometimes in short chains, were found consistently in the lesions of the spinal cord, medulla and brain of persons who had died of epidemic poliomyelitis and of monkeys and mice that died or were killed by anesthesia during the acute stage of poliomyelitis after inoculation with either emulsions or filtrates of the virus; but on investigation of points remote from these lesions the diplococci were proved to be absent.[20]

A distinct tendency to elective localization had been noted in certain streptococci: The streptococcus isolated in studies of epidemic and experimentally induced poliomyelitis tended to localize in the brain and spinal cord and to produce flaccid paralysis, while the streptococcus isolated in studies of arthritis tended to localize in joints and to produce arthritis. In the hope of determining a cause for this phenomenon, large numbers of streptococci of these types were killed by heat and injected intracerebrally in parallel manner into rhesus monkeys and rabbits. The results were remarkable. The streptococcus of poliomyelitis remained in the cerebrospinal fluid and spinal cord, producing great weakness or flaccid paralysis, but no lesions were produced in muscles or joints, nor was the streptococcus demonstrable in the knee joint fluid. The streptococcus of arthritis disappeared promptly from the cerebrospinal fluid and appeared in large numbers in the knee joint fluid while pain and stiffness became evident and lesions of muscles and joints developed. The cause of these examples of specificity or tropism in the dead streptococci is considered similar to or identical with that involved in the well-recognized specific pharmacological action of drugs, chemicals and bacterial toxins.

Of the monkeys subjected to the previous experiment, all were sacrificed for postmortem examination except four that had received the dead streptococci of poliomyelitis and two that had received the dead streptococci of arthritis. These remaining animals were inoculated intranasally with highly potent poliomyelitis virus ten days after the previous intracerebral inoculation. The four monkeys that had received the dead streptococci of poliomyelitis remained well, while typical poliomyelitis developed in the two that had received the dead streptococci of arthritis.

The importance of the streptococcus in poliomyelitis was indicated further in the course of experiments with many different virus strains which had been preserved for periods ranging from several months to six years, at 10° C. in 50 per cent glycerin, in specimens of brain and spinal cord of monkeys that had died of experimentally induced poliomyelitis. Emulsions of these virus strains were injected intracerebrally into a total of 298 monkeys and were also cultured in dextrose-brain broth. Emulsions which yielded pure growths of streptococcus in culture caused a much higher incidence of typical poliomyelitis in the monkeys than those emulsions which on culture yielded no streptococci.[14]

II. *Serologic and Antigenic Specificity of the Streptococcus and Diagnostic Cutaneous and Precipitation Reactions*

In addition to having distinctive distribution curves of cataphoretic velocity and characteristic localizing and disease-producing properties, the streptococcus isolated from and noted in the lesions of poliomyelitis was found to be specific in its serological reaction. It was agglutinated specifically in high titer by antiserum produced in the horse and differentially by serum obtained from convalescent subjects.[18, 20]

The presence of specific streptococcal antigen was demonstrated consistently by the precipitation reaction at the interface between the poliomyelitis antistreptococcus serum and extracts, in sodium chloride solution, of nasopharyngeal swabbings of persons who had poliomyelitis, of persons who had had contact with poliomyelitis patients, and of persons who had had no such contacts but were in the area during epidemics in the summer. The presence of the antigen could not be demonstrated by identical test in winter in places remote from epidemics, except in the serum of persons and monkeys in the active stage of poliomyelitis.[20, 21]

Solutions were made of the euglobin fraction of the serum of horses that had been immunized with the streptococcus[20, 21, 22] and with the heat-produced antibody prepared in vitro from the streptococcus. These solutions were used to test well persons in areas of poliomyelitis epidemics, both those who had and those who had not had contact with persons who had the disease. The presence of specific streptococcal antigen in the skin or blood of these well persons was demonstrated, and corresponding streptococcal infection in throat, intestinal tract or elsewhere was thereby indicated. Again, the application of the test in winter in places remote from epidemic areas demonstrated the absence of infection with the streptococcus.[23, 24, 25] Conversely, the soluble antigen of the heat-killed streptococcus, similarly used, demonstrated the presence of the streptococcal antibody in the skin or blood of persons with poliomyelitis and of well persons in areas of epidemics.[20, 21, 22]

Since these tests—with the thermal antibody for the antigen and with the antigen for the antibody—were found to be invariably harmless and non-sensitizing, and since they yielded such precise information, they were applied, in an etiologic and epidemiologic study, to determine the presence of the specific streptococcus in a total of 432 patients with poliomyelitis and a larger number of well persons in

epidemic areas in summer and, in winter, in places remote from epidemic areas. The results were illuminating. The intensity of reaction indicating specific streptococcal antigen was directly proportional to the degree of paralysis in patients with the disease; the reaction was significantly greater in well persons that had not previously been exposed to poliomyelitis than in persons previously exposed, and in males, the sex more susceptible to poliomyelitis, than in females. In striking contrast, the reaction indicating the presence of antibody was greatest in persons with slighter paralysis or none, least in persons severely paralyzed, greater in females than in males, and greater in persons previously exposed to poliomyelitis than in persons not previously exposed. The intensity of reaction indicating the presence of streptococcal antigen in well persons during epidemics, both in those who had had contact with diseased persons and in those who had not, was roughly proportional to age and somewhat greater in males. In well persons, the test for antibody produced a somewhat greater reaction in females than in males and uniformly a greater reaction than was produced in persons severely paralyzed by the disease. Evidence was obtained in these studies which indicates that immunity to poliomyelitis in proportion to age, and immunity following mild cases or following exposure to epidemics in temperate climates in summer, is due to a long-lasting streptococcal antibody response that is accelerated on subsequent exposure to the organism, especially in summer.

A close parallel was noted among three phenomena: (1) The incidence and degree of reaction indicating streptococcal antigen following intradermal injection of antibody; (2) the agglutination titer of the serum during convalescence; and (3) the viral-neutralizing antibody titer of the serum in convalescence proportional with the severity of the illness, as reported by Jensen.[3] Moreover, all these reactions were observed to occur in inverse proportion to the degree of paralysis in the subject.

Two other tests were made, with notable results, on monkeys inoculated with filtrates of highly potent virus. Daily intradermal injection of saline solution of the euglobin fraction of poliomyelitis antistreptococcal serum caused immediate erythema and edema of the skin. A precipitate occurred in 24 hours at the interface between clear unconcentrated antistreptococcal serum and the serum of the monkeys obtained daily. Neither test produced results before the monkeys were inoculated or during the period of incubation; the results described were observed on the first day of symptoms and throughout twelve to eighteen days, and could no longer be produced after recovery.[20]

The degree of cutaneous erythema that occurred eighteen to 24 hours after intradermal injection of suspensions of the heat-killed streptococcus was used as a gauge of the susceptibility of humans to poliomyelitis. Little or no erythema was produced in persons who had recovered from poliomyelitis either a short or a long time before. Among persons who had not had the disease, in general the reaction was less in older than in younger subjects. Patients recovering from the disease had successively less pronounced reaction as recovery progressed. Moreover, when well students at a college where an epidemic of poliomyelitis occurred were tested, each a number of times, the degree of reaction diminished sharply during the epidemic and for six weeks thereafter; there was no change in reaction to control injection of heat-killed streptococci isolated in studies of arthritis, and no reduction in reaction to the poliomyelitis streptococcal suspension in students tested as controls at a neighboring college where poliomyelitis had not occurred.[20]

III. *Experimental Production of the Poliomyelitis Virus From Neurotropic Streptococci*

Attempts to reproduce the typical clinical and pathologic features of poliomyelitis including the period of incubation by means of the associated streptococcus resulted in failure, as did attempts to produce the "virus" in vitro and in vivo with various cultures of the streptococcus, until a medium was used which did not become acid from growth of streptococci. This medium consisted of "infantile" tissue—that of 19-day hatching chicken eggs. The eggs, including the shells, were reduced to a mash which was mixed with seven parts of distilled water, infused at 10° C. for 24 hours, placed in tall containers, sterilized in an autoclave and sealed with a film of liquid petrolatum. This medium was found very favorable for the isolation, rapid growth and maintenance of viability of the streptococcus. As the cultures aged, smaller and even submicroscopic filtrable forms developed.

After inoculation of mice and monkeys with the older cultures and the filtrates from them, symptoms and lesions of encephalomyelitis developed. On serial brain-to-brain transmission in mice of a strain highly susceptible to encephalitis virus and resistant to poliomyelitis virus, the virus became extremely potent but remained encephalitic. After numerous transmissions, brain emulsions were prepared from the latest mice in the series and injected into rhesus monkeys of a strain highly resistant to encephalitis virus and highly susceptible to poliomyelitis virus. Encephalopoliomyelitis resulted from this inoculation and also from inoculation with the aged chick-embryo culture and with filtrates of cultures of the streptococcus isolated directly from poliomyelitis virus; but on serial brain-to-brain transmission in the monkeys, the virus became poliomyelitic.[29, 30, 31]

The clinical and pathologic features of the poliomyelitis caused by the experimentally developed virus were indistinguishable from those caused by the natural virus. Monkeys that recovered from poliomyelitis produced with the experimental virus were found to be immune to natural virus, and vice versa; the serum of monkeys convalescent from natural virus neutralized the experimental virus and vice versa. When animals were inoculated with emulsions and filtrates of emulsions of spinal cord of monkeys that had received the experimental virus, the streptococcus appeared in the spinal fluid and

in the lesions in the anterior horns of the spinal cord in the same manner as in infection with the "natural" virus, and could be isolated from spinal cord only by the special methods used for isolation of the natural virus.

Diplococci, varying greatly in size, sometimes grouped in short chains and circles, were seen with the electron microscope at 12,000 diameters in filtrates of both natural and experimentally produced virus without staining or shadowing; after special staining the larger forms were seen with the light microscope at 1300 diameters. It was estimated from the number of particles, ovoid in shape, some diploid and some in short chain formation, that 400 million were present per milliliter of the Berkefeld N filtrates examined. In films of dextrose brain-broth cultures of the streptococcus isolated from poliomyelitis virus, prepared with Gram-saffranin stain and fixed with formalin, extremely minute diplococci, both free and in radial orientation, were seen, but only with the electron microscope.[32] The diplococcal chain formations were more conspicuous in a second study with the electron microscope of filtered highly potent virus (unpublished data).* Proof now appears complete that the virus of poliomyelitis is particulate, spherical or elongated, and grouped in diploid or in short filamentous chain formation, as evidenced in electron micrographs by Loring, Schwerdt and Marton[5] and, most convincingly, by Reagan, Schenck and Brueckner.[11] The observations of these investigators further strongly suggest that the virus and the streptococcus are related. The recent reports by others of electron micrographs of particles of various sizes, spherical or ovoid and in diploid or short chain formation, in the viruses of herpes zoster, mumps, encephalitis and influenza—the treatment of which remains an unsolved problem—may be taken to indicate that the viruses of these diseases may likewise be related to the respective specific streptococci which the author has isolated by special methods in these diseases and with which the lesions characteristic of the diseases have been reproduced or closely simulated.

IV. *Protection of Monkeys Against Virus and the Serum Treatment of Epidemic Poliomyelitis*

Poliomyelitis, occurring in epidemics or experimentally produced in animals, has been treated in a large number of cases with the antistreptococcal serum prepared in horses. A total of 282 rhesus monkeys were actively immunized with the serum, subjected to tests which gave presumptive evidence that the virus would be neutralized, and then inoculated with poliomyelitis virus. Of these monkeys 103 or 36 per cent died of the disease. In sharp contrast, of 293 normal control monkeys also inoculated, 240 or 82 per cent died of the disease.[20] The serum was made available for treatment of patients with poliomyelitis by Eli Lilly and Company and was distributed to physicians working independently. Of 710 patients treated with the serum, 60 or 8 per cent died. During the period of this trial, 2,737 other cases (in which the serum was not used) were reported as occurring in different epidemics under similar conditions, and 583 or 21 per cent of the patients died.

Cases in which the author and co-workers used the antistreptococcal serum were divided into three groups according to the length of time that had elapsed from onset of disease to beginning of treatment. (The diagnosis was established by studies of spinal fluid in all cases in which paralysis had not already occurred and in nearly all other cases.) The results were as follows: Of 487 patients who received the first injection of serum before onset of paralysis, 16 or 3 per cent died, and of 460 of the remainder who were adequately followed, only 9 or 2 per cent had severe residual paralysis. Of 696 patients who had slight or moderate paralysis at the time of the first serum treatment, 42 or 6 per cent died, and of 621 of the rest of them who were followed, 20 or 3 per cent had severe residual paralysis. Of 771 who were severely paralyzed before the first serum treatment, 134 or 17 per cent died and of 635 of the remaining patients who were followed, 150 or 24 per cent had severe residual paralysis. Of the total number of patients in these three groups, 10 per cent died and 10 per cent had severe residual paralysis. Of the control patients who did not receive the serum, 25 per cent died and 33 per cent had severe residual paralysis. Equally favorable results were independently obtained in 1917 by Nuzum and Willy[9] in the treatment of epidemic poliomyelitis with antistreptococcal serum prepared in the horse.

The antistreptococcal serum is not now available; it deteriorates rapidly in storage, and outbreaks of the disease are seasonal. However, studies on the production in vitro of antibody from streptococci and other bacteria [24, 25] have resulted in the development of non-sensitizing and more stable solutions of heat-treated antibody from streptococci isolated in studies of a number of diseases including epidemic poliomyelitis. In such solutions the antibody prepared from the streptococcus of poliomyelitis has neutralized with significant frequency a virus potent in the mouse;[26] it specifically agglutinates the streptococcus in extremely high titer and notably accelerates the destruction of the streptococcus on intraperitoneal injection into mice.[24] Subcutaneous or intramuscular injection of this antibody in therapeutic amounts in persons with poliomyelitis causes abrupt diminution of antigen and increase in antibody (as determined by reaction to intradermal injections of antibody and antigen);[20] the treatment appears to prevent paralysis and otherwise affect favorably the clinical course of the disease[26, 33, 10, 12] and, prophylactically used, to prevent transmission within family groups.

CONCLUSIONS

On the basis of the facts reviewed in this presentation, it is concluded that epidemic poliomyelitis is due to infection by a specific streptococcus

* The author is indebted to Radio Corporation of America, Camden, N. J., and General Electric Company, Schenectady, N. Y., for assistance and for the use of the electron microscopes.

which in the "virus" phase becomes minute and filtrable and perhaps thus penetrates the blood-brain barrier to invade the central nervous system from the primary site of infection in the nasopharynx or the intestinal tract. During or after the filtrable phase, the organism reverts to streptococcal size in which it is cultivable, toxicogenic and causative of lesions, fever, tremors and paralysis. During the subsequent course of the disease both the viral and the coccal forms propagate in parallel in varying proportions and are virtually inseparable even in filtrates of highly potent "virus."

Immunity following the course of the disease would seem to be due mainly to the effects of the large, cultivable form of the organism in its toxicogenic-antigenic phase. With serum containing the organism in this phase, monkeys have been immunized against the effects of the virus; antistreptococcal sera and antibody have been prepared with the streptococcus, although these preparations could not be made with the minute, filtrable form.

That the large cultivable streptococcus is also the form of the organism in primary infection is evidenced by the facts that (1) the "viral" form cannot propagate except in or on the susceptible living cells of a susceptible host, as has been shown in studies; (2) the virus has been produced experimentally from neurotropic streptococci; and (3) the streptococcal flora indigenous in man and in animals tend to become neurotropic in summer in temperate climates.

The use in adequate dosage of the non-toxic, non-sensitizing heat-produced antibody prepared from the specific type of streptococcus whose specificity was maintained is strongly indicated for the treatment of epidemic poliomyelitis. This material can readily be prepared, by methods previously described, from the streptococcus as isolated from the nasopharynx of persons who have the disease during epidemics.

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REFERENCES

1. Hektoen, L., Mathers, G., and Jackson, L.: Microscopic demonstration of cocci in the central nervous system in epidemic poliomyelitis, Jour. Infect. Dis., 22:87-94, 1918.

2. Hektoen, L.: Recent investigations on the bacteriology of acute poliomyelitis, Boston M. & S. J., 176:687-695, 1917.

3. Jensen, C.: The 1934 epidemic in Denmark, Proc. Roy. Soc. Med. (Sec. Path.), 28:13-32, 1935.

4. Kolmer, J. A., and Freese, A. E.: Complement fixation in acute anterior poliomyelitis, J. Immunol., 2:327-339, 1917.

5. Loring, H. S., Schwerdt, C. E., and Marton, L.: Studies of purified preparations of the MV strain of poliomyelitis virus by means of the electron microscope, Physical Rev., 65:354, 1944.

6. Mathers, G.: Some bacteriologic observations on epidemic poliomyelitis, J.A.M.A., 67:1019, 1916.

7. Mathers, G., and Tunnicliff, R.: A reaction of immunity in acute poliomyelitis, J.A.M.A., 67:1935-1936, 1916.

8. Nuzum, J. W., and Herzog, M.: Experimental studies in the etiology of acute epidemic poliomyelitis, J.A.M.A., 67:1205-1208, 1916.

9. Nuzum, J. W., and Willy, R. G.: Specific serum therapy of epidemic poliomyelitis; report on 159 cases treated with antipoliomyelitic horse serum, J.A.M.A., 69:1247-1254, 1917.

10. Rappaport, Benjamin: Acute poliomyelitis treated with thermal antibody, the Journal-Lancet, 68:395-397, 1948.

11. Reagan, R. L., Schenck, Dorothy M., and Brueckner, A. L.: Morphological observations by electron microscopy of the Brunhilde strain of poliomyelitis virus, Jour. Infec. Dis., 86:295-296, 1950.

12. Robinson, E. L.: Poliomyelitis Report for 1949, Medical Bulletin, Butler County, Ohio.

Rosenow, E. C.:

13. The etiology and experimental production of herpes zoster. Preliminary note, Jour. Am. Med. Assn., 64:1968, 1915; Jour. Infect. Dis., 18:477-500, 1916.

14. Elective localization of streptococci, J.A.M.A., 65: 1687-1691, 1915.

15. With Towne, E. B., and Wheeler, G. W.: The etiology of epidemic poliomyelitis, preliminary note, J.A.M.A., 67: 1202-1205, 1916.

16. With Wheeler, G. W.: The etiology of epidemic poliomyelitis, Jour. Infect. Dis., 22:281-312, 1918.

17. With Towne, E. B., and Wheeler, G. W.: Observation on immunity of monkeys to experimental poliomyelitis, J.A.M.A., 68:280-282, 1917.

18. With Gray, H.: Agglutination of the pleomorphic streptococcus isolated from epidemic poliomyelitis by immune horse serum, Jour. Infect. Dis., 22:345-378, 1918.

19. The production of an antipoliomyelitis serum in horses by inoculation of the pleomorphic streptococcus from poliomyelitis, J.A.M.A., 69:261-265, 1917.

20. Poliomyelitis. The relation of neurotropic streptococci to epidemic and experimental poliomyelitis and poliomyelitis virus, diagnostic serologic tests and serum treatment, The International Bulletin, New York, A-44:1-83, 1944.

21. Precipitin and cutaneous streptococcal antibody-antigen reactions in poliomyelitis, Proc. Staff Meetings Mayo Clinic, 12:531-535, 1937.

22. Further studies on specific streptococcal antibody-antigen reactions in poliomyelitis, Am. J. of Clin. Path., 15: 135-151, 1945.

23. Production in vitro of substances resembling antibodies from bacteria, J. of Inf. Dis., 76:163-178, 1945.

24. Studies on the nature of antibodies produced in vitro from bacteria with hydrogen peroxide and heat, J. of Immunol., 55:219-232, 1947.

25. Intradermal antibody-antigen and antigen-antibody reactions in persons having poliomyelitis, contacts and non-contacts in relation to poliomyelitis, Federation Proceedings, 8: 1949.

26. A study of the 1946 poliomyelitis epidemic by new bacterial methods, The Journal-Lancet, 68:265-277, 1948.

27. A skin reaction in poliomyelitis, Jour. Infect. Dis., 38:529-531, 1926.

28. Further observations on a skin test for susceptibility to poliomyelitis, Am. Jour. Path., 7:546, 1931.

29. The production of a filtrable infectious agent from alpha streptococci, Am. Jour. Clin. Path., 14:150-167, 1944.

30. Studies on the virus nature of an infectious agent obtained from four strains of "neurotropic" alpha streptococci, Jour. Nerv. & Ment. Dis., 100:229-262, 1944.

31. A filtrable infectious agent obtained from alpha streptococci isolated in studies of a case of poliomyelitis, Am. Jour. of Clin. Path., 14:519-533, 1944.

32. Microdiplococci in filtrates of natural and experimental poliomyelitic virus compared under the electron and light microscopes, Proc. Staff Meet. Mayo Clin., 17:99-106, 1942.

33. Bacteriologic studies by new methods of a major epidemic of poliomyelitis, 1947, Journal-Lancet, 69:47, 1949.

Surgical Decompression of the Bowel in Peritonitis

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SUMMARY

In some circumstances peritoneal infection causes distention and crowding of the bowel to such an extent that the effect is that of intestinal obstruction and it is impossible to introduce a tube far enough by physiologic routes to bring about deflation. The pressure upon the diaphragm then may cause pain in breathing, with the result that the patient does not fully expand the lungs and atelectasis develops in the lower lobes. In such circumstances surgical intervention to relieve the pressure in the bowel may be indicated.

An ordinary urethral catheter introduced through an incision in the intestine cannot be extended far enough to relieve pressure in more than a few loops.

A method of using a Foley catheter and of advancing it for greater distances inside the bowel was used in five cases with good results and without complications.

TREATMENT of all types of peritoneal infection rests in the main with conservative management — the use of antibiotic and sulfa drugs and the judicious application of gastric and intestinal suction by means of any of the many adequate tubes available. There are, however, certain exceptional circumstances in which surgical treatment of the pathologic processes associated with peritoneal infection may be required—as in cases of ruptured viscus or cases in which the abdomen is opened without foreknowledge of the presence of extensive peritonitis.

Extensive peritonitis causes the bowel to lose normal tone and motility, to become distended with swallowed air, and to be pressed into layered folds so that the effect is that of intestinal obstruction. The abdomen becomes tense as it is distended and the mounting intraperitoneal pressure causes elevation of the diaphragm and limitation of respiratory excursion. A bed-ridden patient, in pain with each inspiration, so greatly reduces the tidal air volume and takes so much care to avoid coughing that, secondary to accumulated secretions in the bronchi and decreased thoracic volume, atelectasis develops in the lower lobes.

Intestinal deflation is the one measure that can considerably relieve this situation. Unfortunately, in too many cases the temporarily paralyzed bowel cannot welcome to its major portion an intestinal intubation tube, nor can it deliver to the stomach by reverse peristalsis its contents of liquid and gas.

When the abdomen is open, the bowel can be emptied by means of enterostomy, suction being connected to the catheter according to the method of Wangensteen. However, when an ordinary urethral catheter is used, it is difficult to empty more than a few loops of bowel; and if the urethral catheter is brought out through a stab wound, it all too often slips out during the early postoperative hours.

PROCEDURE

To solve this problem the authors used the following procedure in five cases:

After placement of a purse-string suture, the bowel was opened between Allis forceps, a No. 18 Foley catheter with a 5 cc. bag was introduced, and the suction was connected with the catheter. The bag was then filled with 5 cc. of sterile water. The water bag was pressed along inside the bowel (see Figure 1), much as a bodkin is used to thread a drawstring through the hem of a blouse, until several feet of intestine was accordion-folded on the catheter and as much of the bowel as possible was emptied. The butt end of the catheter was then brought out through a stab incision in the flank. Two Foley catheters were used in each case. By this means the entire small intestine was deflated and was kept deflated during the postoperative period.

After operation, the catheters were attached to rubber tubes leading to receptacles. (Postoperatively, suction is unnecessary and undesirable.) After they had been in use eight hours they were irrigated to make sure they were not clogged. The inflated bag prevented the catheter's slipping out until the water was released.

In the cases in which this method was used, the upper catheter was removed on the sixth day and the lower one on the eighth (but of course the period should be adjusted to the progress of the patient). The enterostomy wounds closed spontaneously within a few days, but, for protection meanwhile, aluminum paste was applied around the opening, and the dressings were changed frequently.

The patients were permitted to walk on the first postoperative day, with the catheters clamped during the periods of ambulation.

At the time this report was written this method had been used in three cases of peritonitis secondary to ruptured appendix, in one case secondary to rupture at the site of carcinoma of the colon, and in one case of peritonitis secondary to rupture at the site of duodenal ulcer. All patients recovered without complications.

450 Sutter Street.

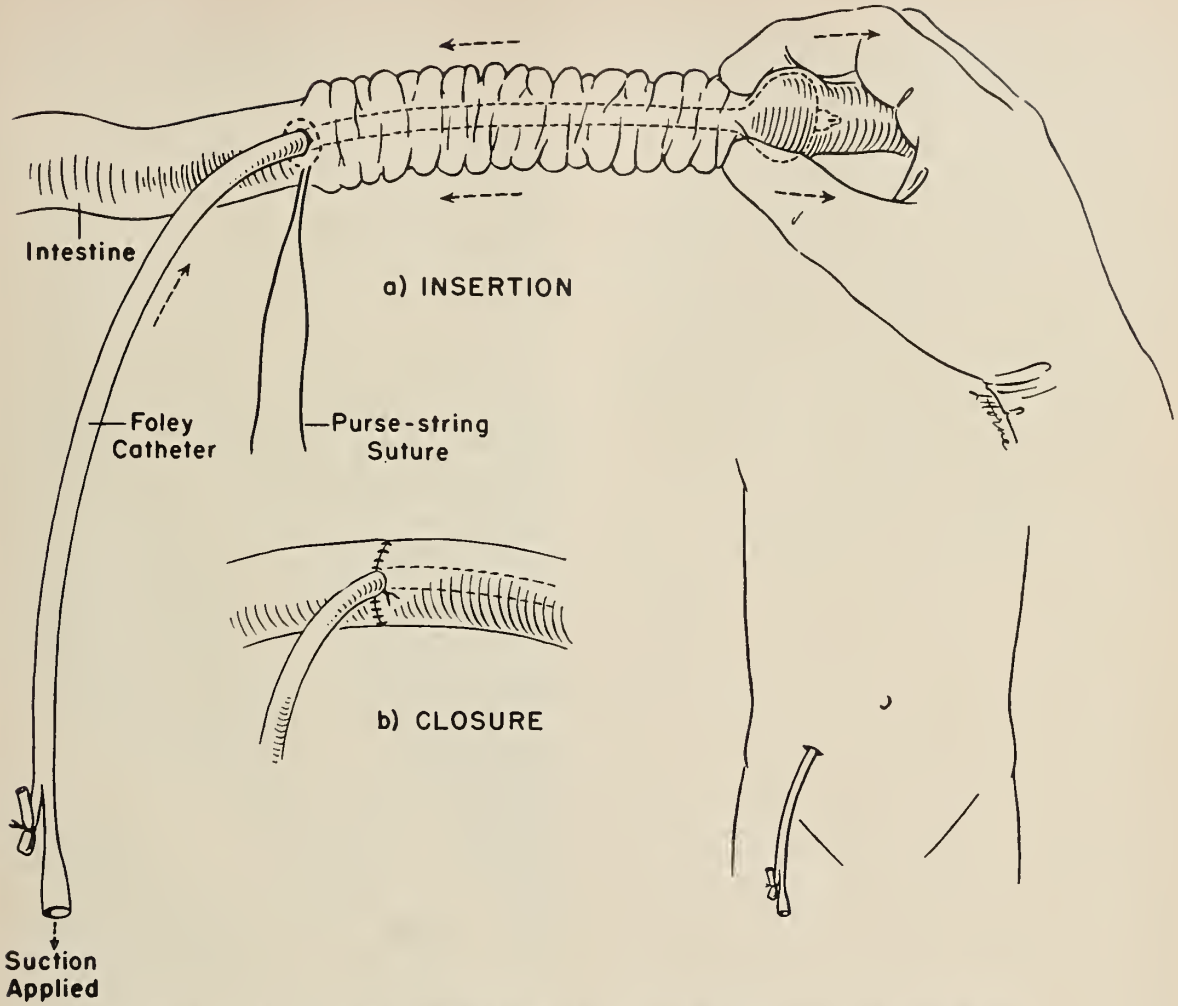

Figure 1.—Method of decompressing the bowel by surgical introduction of a Foley catheter.

CASE REPORTS

◀ Benign Lymphoreticulosis of Inoculation ("Cat-Scratch Fever")

◀ Tetanus Treated with Chloral Hydrate and Myanesin

Benign Lymphoreticulosis of Inoculation ("Cat-Scratch Fever")

TRACY D. CUTTLE, Commander, MC, U. S. Navy, *Oakland*

CAT-SCRATCH fever is a term applied by Lee Foshay of Cincinnati, Ohio, to a disease entity resulting from the scratch of a domestic cat. The first report of this disease published in English was by Greer and Keefer[2] in April 1951. Several reports have appeared in French medical periodicals, the first by Debre[1] and co-workers in January 1950. The disease is characterized by fever, lymphadenopathy, and general malaise; and, in certain cases, an exanthematous eruption resembling that of erythema multiforme or erythema nodosum occurs.

The cause is unknown, although the condition is invariably associated with the scratch of or association with a domestic cat. It resembles tularemia but is a much milder disease. The most striking feature of the disease is the extraordinary lymphadenopathy. Clinical manifestations and laboratory data are not peculiarly characteristic. The etiological agent is, in all probability, a virus that is present in the pus obtained from buboes. A specific antigen is prepared from the pus by the Frei procedure. When injected intradermally, it causes a reaction at the site if the subject has the disease. Antigen prepared from a bubo of a patient with cat-scratch fever was supplied to the author by Foshay. The material was heated to 60° C. for two hours on one day and for one hour the next day. It was then diluted with an equal portion of sterile saline solution. The skin test is made by intradermal injection of 0.1 milliliter of the antigen. A positive reaction consists of the appearance of redness, swelling, and itching at the site of injection at 24 hours, with increase in the size of the involved area at 48 hours. The reaction persists for several days.

It is the purpose of this communication to report a typical case of cat-scratch fever in the San Francisco Bay area. So far as can be determined, there have been no previous reports of this condition in this area, and only one previous case has been reported in English.*

REPORT OF A CASE

A white man 34 years of age was admitted to hospital on June 28, 1951, because of an epitrochlear mass on the left side. The patient was well until approximately June 1, 1951, when he noted an irritated area on the middle finger of the left hand where he had been scratched by a kitten. The lesion did not heal, and about June 14, he noted a tender mass on the medial aspect of the left elbow. The lesion grew and became more painful. At about the same time, the patient noted small tender masses in the left axilla. A week later a small amount of pus was expressed from the original lesion on the hand. Penicillin had been given by a physician, but without relief, and since June 20 (a week before admittance) the patient had noted fatigue, general malaise, fever up to 99.5° F., and vague abdominal distress.

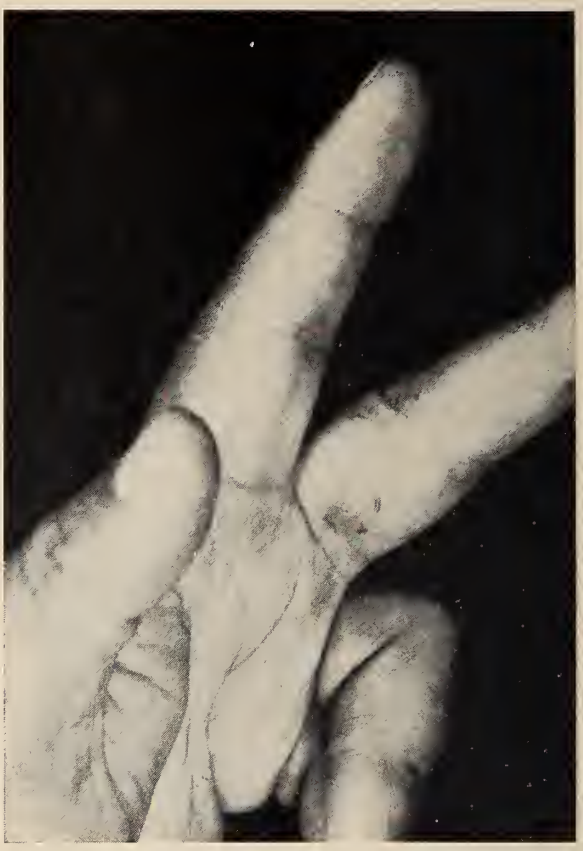

Figure 1.—Lesion on the lateral aspect of the middle finger of the left hand, approximately 0.5 cm. in diameter. The lesion was raised, red, indolent, and slightly tender.

Upon physical examination it was noted that the lesion on the lateral aspect of the middle finger of the left hand, approximately 0.5 cm. in diameter, was raised, red, indolent, and slightly tender. The surrounding area was indurated (see Figure 1). The left epitrochlear lymph node was 4 cm.

The opinions and assertions herein are those of the writers and are not to be construed as official or reflecting the views of the Navy Department or of the Naval Service at large.

*After this report was submitted for publication, W. B. Daniels and F. G. MacMurray published a report on a series of 12 patients with the disease (A.M.A. Arch. Int. Med., 88:736, Dec. 1951) and Cat-Scratch Disease was the subject of an editorial in the Journal of the American Medical Association (J.A.M.A., 148:736, Mar. 1, 1952).

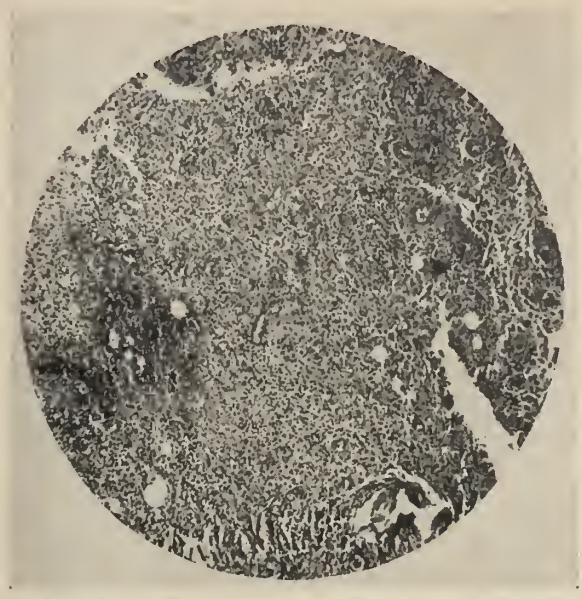

Figure 2.—Loss of normal architecture due to the crowding out of normal follicles by reticuloendothelial hyperplasia.

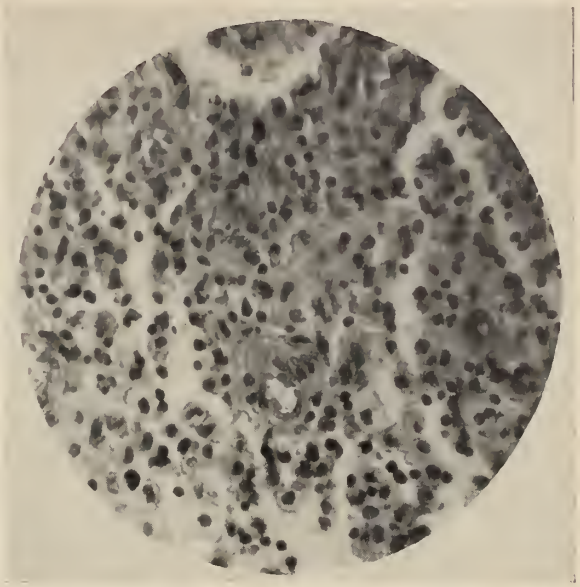

Figure 3.—High-power magnification showing the character of hyperplastic cells.

in diameter. It was firm, tender, freely movable, and the skin over the lesion was inflamed. There were two palpable, tender lymph nodes in the left axilla.

The hemoglobin content of the blood was 14.0 gm. per 100 cc. Erythrocytes numbered 4,800,000 per cu. mm., and leukocytes 8,400 — 67 per cent neutrophils, 26 per cent lymphocytes, 4 per cent monocytes, and 3 per cent eosinophils. The erythrocyte sedimentation rate was 22 mm. in one hour and the packed cell volume was 47 per cent of the whole blood. No significant abnormalities were noted in the urine. Result of a Kahn test of the blood was normal. A Davidsohn heterophil agglutination test and an agglutination test for tularemia were carried out. Results of both were negative. A roentgenogram of the chest was normal.

The possibility of cat-scratch fever was suggested by a member of the staff who had observed a patient with the disease in Washington, D. C. The antigen was injected and the reaction was strongly positive. At 24 hours an area of swelling, redness, and itching, approximately 3 cm. in diameter, was noted at the site of injection. The area increased in the next 48 hours, then subsided over a period of several days. Three other patients subjected to the test had no reaction to the antigen.

On July 18 the left epitrochlear node was excised. In microscopic examination of the excised node it was observed that the normal structure was almost completely replaced by pronounced hyperplasia of the reticuloendothelial cells (see Figures 2 and 3). There appeared to be a moderate increase in fibrous connective tissue. Plasma cells, histiocytes, lymphocytes, and eosinophils were scattered irregularly throughout the sections. Some of the histiocytes appeared swollen and contained vacuoles. No other abnormalities were noted in stained sections.

The symptoms subsided spontaneously, and the patient was discharged from the hospital on July 20.

The clinical course in this case coincided with previous reports describing cat-scratch fever as a self-limited disease lasting three to eight weeks. Although it is a systemic disease with symptoms of fever and general malaise, the lymphadenopathy is the most striking feature. Although in some reported cases exanthema resembling erythema multiforme and erythema nodosum was observed, in the present case there were no dermatic manifestations. Although the symptoms are such that all causes of lymphadenopathy may be considered in differential diagnosis, they particularly resemble those of tularemia. However, cat-scratch fever is a milder disease, and it may readily be distinguished from tularemia on the basis of results of agglutination tests and skin tests with specific antigen. It differs from cat and rat bite fever in etiologic factors; and whereas there is positive reaction to Wassermann and Kahn tests in rat and cat bite fever, in cat-scratch fever the results of these tests are negative. No specific therapy is indicated as the disease is mild and self-limited. Penicillin seems to have no effect on the disease, although aureomycin is reported to be beneficial. A complete description of the pathological changes in lymph nodes at various stages of the disease was reported by Mollaret[3] and co-workers in March 1950. In May 1951 the same investigators reported isolation of the virus of benign lymphoreticulosis of inoculation[4] — an improvement over the colloquial term cat-scratch fever.

In tests upon cats, no reaction to the antigen was noted. Nor was there, in cats, development of complement-fixing antibodies against Lygranum.® In humans who have the disease, complement-fixing antibodies against Lygranum develop as the disease progresses.

SUMMARY

A case of cat-scratch fever is presented. This is the first recorded occurrence of the disease in the San Francisco Bay area and the second case reported in English. Approximately 20 cases have been reported in French medical periodicals.

The disease is characterized by a history of scratch by a domestic cat, followed by fever, malaise, and remarkable lymphadenopathy.

Skin manifestations resembling those of erythema multiforme and erythema nodosum have been reported.

The infective agent is a filterable virus which is present in pus from involved lymph nodes. An antigen made of the pus causes specific dermatic reaction in persons who have the disease.

The pathological changes in the lymph nodes have been presented.

No specific therapy is indicated, although it is suggested that aureomycin may be beneficial.

U. S. Naval Hospital.

ACKNOWLEDGMENT

The author is grateful to Captain Joseph L. Zundell, M.C., USN, for his assistance in the preparation of the microphotographs of the lymph nodes and Dr. Lee Foshay for the supply of antigen used in this investigation.

REFERENCES

1. Debre, R., Lamy, M., Jammet, M. L., Costil, L., et Mozziconacci, P.: La maladie des griffes de chat, Bull. et Mem. de la Soc. Med. des Hosp. de Paris, 66:76-79, Jan. 20, 1950.

2. Greer, W. E. R., and Keefer, C. S.: Cat-scratch fever, New England J. of Med., 244:545, April 12, 1951.

3. Mollaret, P., Reilly, J., Bastin, R., and Tournier, P.: Memoire sur une adenopathie regionale subaigue et spontanement curable, avec intradermo-reaction et lesions ganglionnaires particulieres, Bull. et Mem. de la Soc. Med. des Hosp. de Paris, 66:424-449, March 24, 1950.

4. Mollaret, P., Reilly, J., Bastin, R., and Tournier, P.: La decouverté du virus de la lymphoreticulose benigne d'inoculation. II. Inoculation experiementale au singe et colorations, La Presse Medicale, 59:701-704, May 23, 1951.

Tetanus Treated with Chloral Hydrate and Myanesin

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THE use of Myanesin® as an adjunct in the treatment of tetanus arises from its properties as a muscle relaxant. The original work on this drug was done in 1946 by Berger and Bradley,[1,2,3] who noted that muscular relaxation could be obtained without cerebral depression. In higher doses the drug caused analgesia, ataxia, and finally an arousable sleep with paralysis. As the convulsions caused by strychnine were lessened or abated by Myanesin, it was thought the drug acted through reduction of the reflex excitability at the spinal cord level. Convulsions due to Metrazol® were not affected, however, presumably because Metrazol acts through the higher centers.

Used clinically by Stephen and Chandy[8] in 1947, Myanesin was observed to attenuate the tremor of Parkinsonism. This was confirmed by Gammon and Churchill in 1949.[7]

Berger and Schwartz[4] in 1948 reported successful treatment of patients with cerebral palsy of the spastic, athetoid, and choreiform types with Myanesin given by mouth.

The use of the drug in the treatment of tetanus, at least so far as is reported in the English literature, is of recent origin. There are apparently no reports on large series with controls, but results reported in sporadic cases of tetanus indicate the drug is of definite value in controlling convulsions.

The most serious complication in the use of the drug appears to be a tendency to hemolyze erythrocytes, a tendency that is accentuated when it is given intravenously. Also overdoses will cause ataxia, and nystagmus, first horizontal, then vertical.

Various methods of use have been reported. In some cases the drug was used alone, either intravenously[6] or orally,[5] but more commonly some form of sedation was used with it—usually a barbiturate, paraldehyde, Avertin® given rectally, or chloral hydrate. Owing to the variability of the disease and of the treatment, and especially in the absence of long term surveys, the most efficacious means of treatment cannot be determined as yet.

From the Service of Dr. A. G. Bower, Los Angeles County Hospital.

REPORT OF A CASE

An eight-year-old boy was admitted to the hospital Aug. 8, 1951, four hours after onset of abdominal pain, inability to open the mouth, and aching in the neck. The patient had had a puncture wound into the dorsum of the left foot from a dirty stick one week previously. A physician was not consulted. The wound was treated at home with soaks and ostensibly healed satisfactorily. The patient had never been immunized against tetanus.

Upon examination, severe trismus, moderately severe nuchal rigidity, abdominal spasm, and moderate ham-string spasm were noted. The reflexes were equal but hyperactive. There was an old abraded puncture wound on the dorsum of the left foot.

The hemoglobin content of the blood was 13.5 gm. per 100 cc., erythrocytes numbered 3.29 million per cu. mm. and leukocytes 10,500 with 88 per cent polymorphonucleocytes. The urine was normal.

A total of 200,000 units of tetanus antitoxin was given, 40,000 units in each buttock, 40,000 in the left thigh, and the remainder injected around the wound locally.

The wound then was widely excised with the patient under general anesthesia. After the operation the patient was given chloral hydrate, 1 gm. every three to six hours.

The following day the condition was unchanged, and the frequency and severity of the contractions appeared not to be controlled by chloral hydrate in the amounts given, even though it was given to a point where the patient remained unresponsive between contractions. Even the slightest stimuli set off moderate contractions.

On the third day Myanesin was given intravenously in doses of 300 mg. each, at first every two to three hours and then every three hours. The frequency of the injections was necessary because, although pronounced muscular relaxation was noted immediately after each, severe contractions occurred approximately an hour later. Chloral hydrate also was given every two to three hours in amounts of 1 gm. to 1.3 gm. as the situation seemed to dictate. During this time the paticnt was semicomatose, and 5 per cent glucose in water or saline solution was administered by constant intravenous drip.

In order to prevent the severe contractions about an hour after Myanesin was given, administration of the drug by constant intravenous drip was started. The amount infused in a 24-hour period was about 7.5 gm., and, except for a single severe seizure that occurred before a significant amount of Myanesin could be given by this means, the patient did extremely well in that there were many mild contractions but fewer moderately severe spasms and none that were severe. The most dramatic aspect at this point was the relatively high threshold of reactivity to contractions; stimuli that formerly would have caused a major seizure caused only mild contractions or none at all.

On the seventh day after admittance to hospital, the patient was febrile and had severe generalized urticaria and a moderate amount of edema. Penicillin (which the patient had been receiving prophylactically) and Myanesin were discontinued as possible allergens. To relieve the urticaria which was evidently causing the patient much distress, Benadryl® was given intravenously but without effect.

The following day the edema was much worse and it was thought to be caused by serum reaction. More Benadryl was given, and then 0.5 gm. of procaine intravenously, but to no avail. As the edema was so severe and the patient restless, 10 mg. of adrenocorticotropic hormone was given intravenously over a 12-hour period. There was no appreciable effect; the same dose was repeated. No change was noted in the next two days except perhaps an increase in edema and more frequent contractions.

The following day a Levine tube was inserted in order that Myanesin might be given orally, and also to facilitate feeding. Although this was the ninth day of the disease, the first attempt to place the Levine tube, after 1.3 gm. of chloral hydrate had been given as sedation, caused several moderately severe contractions. Then 300 mg. of Myanesin was given intravenously and the tube was inserted.

Next day, Aug. 19, mild abdominal distention was present, and on two occasions the patient had severe contractions, with laryngospasm, which were relieved by giving a barbiturate intravenously.

On Aug. 20 the patient was in extremely critical condition, primarily because the edema had progressed to involve the neck and there were frequent moderately severe contractions with laryngospasm. He was also very dyspneic and bordering on cyanosis. Breathing was almost entirely diaphragmatic with very poor intercostal excursion. Because of the apparent laryngeal obstruction due to edema, tracheotomy was done.

Although the patient then seemed to improve slightly, respirations were no better and positive pressure to assist breathing through the tracheotomy tube was applied for about 15 minutes, and it was thought there was a little further improvement. To assure steadier respiration, the patient was removed to a Drinker-Collins respirator. In the short period (two to five minutes) necessary to effect the transfer, even with positive pressure breathing, the patient became apneic and the pulse was not palpable for approximately 30 to 60 seconds. The color of the patient improved dramatically and immediately after he was placed in the respirator.

For the next four days abdominal distention and dysuria were distressing and seemed to cause a greater frequency of contractions. The patient was febrile and in an x-ray film of the chest paramediastinal density consistent with pneumonia was noted. The urine was normal. Administration of penicillin intramuscularly and of chloramphenicol by Levine tube was started Aug. 22. On Aug. 24 the patient was taken out of the respirator and the breathing then was noted to be labored and with poor intercostal excursion. After 30 minutes out of the respirator the patient again had a major contraction and he was returned to the respirator.

There was gradual improvement for the next four days, but on the fifth day a generalized papular rash, interpreted as a sensitivity reaction, developed and the Myanesin was discontinued. Chloral hydrate was given as usual.

On Aug. 29, when the patient was again removed from the respirator, dyspnea was still present. Edema was negligible.

By Sept. 4, the breathing had so improved that the respirator no longer was necessary, and recovery then was comparatively uneventful except for an occasional minor spasm, and a foot drop that had developed apparently as a result of the constant spasm of the disease.

DISCUSSION

A striking feature in this case was that Myanesin could stop a severe tetanic contraction and yet not cause respiratory depression such as occurs with intravenous use of a barbiturate.

For the first two and a half days, Myanesin was given in interrupted intravenous injections and all major contractions occurred about an hour after the injections. When Myanesin was given by constant intravenous drip the number and especially the severity of the contractions diminished.

When Myanesin was discontinued, even though the chloral hydrate was continued in therapeutic dosage, contractions intensified. Unfortunately, Myanesin was used in comparatively small dosages and there was no striking improvement.

That the present case was a severe one is indicated by the fact that on the eighteenth day of the disease the patient had a major contraction apparently secondary to the partial asphyxia from being left out of the respirator too long.

Also of interest, although not related to the tetanus, was the fact that ACTH did not lessen the serum sickness. Unfortunately, eosinophil studies to determine if the dose was sufficient were not carried out.

While it is stated in the literature that it is possible to treat the disease with Myanesin given by Levine tube, this method was not successful in the present case until the disease had subsided considerably.

REFERENCES

1. Berger, F. M., and Bradley, W.: Pharmacological properties of α:β-dihydroxy γ-(2-methylphenoxyl)-propane (Myanesin), Brit. J. Pharmacol., 1:265-272, Dec. 1946.

2. Berger, F. M., and Bradley, W.: Muscle relaxing action of Myanesin, Lancet, 1:97, Jan. 18, 1947.

3. Berger, F. M.: Mode of action of Myanesin, Brit. J. Pharmacol., 2:241-250, Dec. 1947.

4. Berger, F. M., and Schwartz, R. P.: Oral Myanesin in the treatment of spastic and hyperkinetic disorders, J.A.M.A., 137:772-774, June 26, 1948.

5. Boles, T. C., and Smith, J. H.: Mephenesin in treatment of tetanus. Results of oral administration in three cases, J.A.M.A., 146:1296, Aug. 8, 1951.

6. Davison, M. H. A.: Mephenesin in tetanus, Anesthesiology, 12:120-121, Jan. 1951.

7. Gammon, G. D., and Churchill, J. A.: Effects of Myanesin upon the central nervous system, Am. J. M. Sci., 217: 143-148, Feb. 1949.

8. Stephens, C. R., and Chandy, J.: Clinical and experimental studies with Myanesin (preliminary report), Canad. M.A.J., 57:463-468, Nov. 1947.

California MEDICINE

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EDITORIAL

1952 Annual Session

What has been described by many members as one of the best Annual Sessions in C.M.A. history was concluded in Los Angeles on April 30. In all departments it operated smoothly and with a greater degree of leisure than has characterized earlier meetings.

Registration was over 4,000, more than it had ever been before; but so well organized was the registration desk that there was none of the tedium or of the confusion that usually attends the business of registering at a convention, large or small. Indeed, one registrant was heard to say that, save for the fact that he was pleasantly greeted at the desk, he felt "like an automobile being assembled."

In the scientific department, the session presented a program of excellent papers in all sections. Those who attended had opportunity to hear interesting presentations by the Association's guest speakers: Charles L. Brown, M.D., dean, Hahnemann Medical College, Philadelphia; William S. McCann, M.D., Charles A. Dewey professor of medicine, University of Rochester School of Medicine, Rochester, N. Y.; Lester R. Dragstedt, M.D., professor of surgery, University of Chicago School of Medicine; Haven Emerson, M.D., professor emeritus, Public Health Administration, Columbia University College of Physicians and Surgeons, past president, American Public Health Association, New York; and Eugene P. Pendergrass, M.D., professor of radiology, University of Pennsylvania School of Medicine, Philadelphia. For the most part, the available meeting rooms were adequate to handle those present, and interest in all subjects was high. The scientific exhibits were well attended and came in for high praise. Medical motion pictures were shown daily on a day-long schedule, covering a multitude of subjects and drawing large and enthusiastic audiences. The director of this section of the program again came in for the plaudits of his fellows for the excellence of the display.

Exceptionally able newspapermen who were assigned by newspapers in Los Angeles and San Francisco to cover the meeting expressed pleasure that the Association had helped make their task easier.

On the social side, the Woman's Auxiliary put on an unusually fine program and, as usual, attracted many members of the Association to its reception. Its business meetings were very well attended and commanded a great deal of interest.

The House of Delegates, this year operating with two reference committees to consider new business, put in its usual long hours and came up with its usual sound decisions. Great interest was shown in the report of the C.P.S. Study Committee. Made in the form of a progress report, it brought to the fore some subjects on which definite recommendations were possible now and discussed others which will require further study. The House voted to continue this committee in existence, both for the purpose of carrying on further studies and as a means of retaining the valuable knowledge which the committee members have gained in the past nine months.

Considerable discussion took place in the House of Delegates over the interim sessions of the House. When the votes were counted, the Interim Session was retained and tentative arrangements have been made to hold the next interim meeting in San Francisco in early December.

In the elections, Dr. John W. Green of Vallejo was chosen as President-Elect. Dr. Donald A. Charnock was reelected as Speaker of the House and Dr. Wilbur Bailey was picked as Vice-Speaker. Drs. Warren L. Bostick of Marin County, Omer W. Wheeler of Riverside, Arthur A. Kirchner of Los Angeles and Hollis L. Carey of Butte were named as new members of the Council, succeeding Drs. Green, Bailey, Thompson and the late John Ball. Other incumbent Councilors were reelected.

A full transcript of the House of Delegates meetings will appear in next month's issue. It is highly recommended reading for the many members who cannot attend the Annual Session but wish to keep up with the affairs of the California Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

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NOTICES AND REPORTS

The New President-Elect

John W. Green of Vallejo, who for 38 years has been almost continuously an official in organized medicine at local, state and national levels—with time out for military service in the first world war—was elected President-Elect of the California Medical Association at the 1952 Annual Session in Los Angeles in April.

The record of Dr. Green's official posts indicates that almost from the time he became a full-fledged physician his ability and usefulness in medical organizations was recognized. Graduated from Rush Medical College in 1908, he interned at Mercy Hospital, Iron River, Mich., and then:

1914, secretary of Black Hills, South Dakota, District Medical Society.

1915-1916, secretary Koble County, Indiana, Medical Society.

1917-1921, served in U. S. Navy. His last assignment was as ship's surgeon on vessels returning troops from France, and he was discharged at Mare Island Navy Yard, Vallejo. There he reentered private practice, specializing in diseases of the eye, ear, nose and throat, and became a member of the Solano County Medical Society, which he served six years as secretary, two years as president.

For eleven years Dr. Green was a member of the House of Delegates of the California Medical Association and for the past twelve years has been a member of the C.M.A. Council representing the Tenth Councilor District. He is also a delegate from California to the House of Delegates of the American Medical Association.

Like many a busy man, the new President-Elect has a bow with many strings. That he has found time for other than the organizational aspects of medicine is indicated in the fact that he is a past-president of the Vallejo Academy of Medicine and of the Northern California Eye, Ear, Nose and Throat Society. And there is hardly a civic organization in his own community that he has not served or does not now serve in one official capacity or another. Nor is he a man unacquainted with budgets and balance sheets and income accounts: He was the first president of the Vallejo Finance and Thrift Company and is now a director of the Vallejo branch of the Bank of America.

JOHN W. GREEN

Although the record speaks well, perhaps a better estimate is given in the words of his long-time friend, Dr. Dwight H. Murray: "He will never falter in continuing to do what he believes to be the best for medicine and the welfare of the people of California."

Dr. Green, a physician's son, was born in 1886 on Independence Day.

In Memoriam

Davis, Andrew S. Died in San Leandro, April 1, 1952, aged 51, of carcinoma, generalized. Graduate of the Medical College of Virginia, Richmond, 1926. Licensed in California in 1927. Dr. Davis was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Duncan, John A. Died in Marysville, March 30, 1952, aged 64, of coronary artery disease. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1918. Licensed in California in 1918. Dr. Duncan was a member of the Yuba-Sutter-Colusa County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

Fisher, Ray H. Died in Oakland, April 25, 1952, aged 69, of coronary artery disease. Graduate of the University of Colorado School of Medicine, Denver, 1909. Licensed in California in 1927. Dr. Fisher was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Hamer, Clemen. Died in Glendale, April 2, 1952, aged 68, of pneumonia. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1924. Licensed in California in 1924. Dr. Hamer was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Hanson, Oscar J. Died in Redding, March 7, 1952, aged 46, of coronary thrombosis. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1930. Licensed in California in 1930. Dr. Hansen was a member of the Shasta County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

Hanze, Henry G. Died April 1, 1952, aged 51. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1925. Licensed in California in 1925. Dr. Hanze was a member of the Santa Barbara County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Hatteroth, William H. C. Died in Oakland, April 18, 1952, aged 72. Graduate of the Cooper Medical College, San Francisco, 1903. Licensed in California in 1915. Dr. Hatteroth was a retired member of the Alameda-Contra Costa Medical Association, and the California Medical Association.

✤

Marcussen, Robert M. Died in Menlo Park, April 13, 1952, aged 34. Graduate of Cornell University Medical College, New York, 1943. Licensed in California in 1949. Dr. Marcussen was a member of the San Mateo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

McCullough, James M. Died in Oakland, April 5, 1952, aged 56, of acute coronary occlusion. Graduate of Oakland College of Medicine and Surgery, 1918. Licensed in California in 1918. Dr. McCullough was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Nathanson, Morris H. Died in Los Angeles, April 24, 1952, aged 59. Graduate of the University of Minnesota Medical School, Minneapolis, 1919. Licensed in California in 1935. Dr. Nathanson was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Riggle, Oliver. Died in Lodi, April 19, 1952, aged 69. Graduate of the University of Michigan Homeopathic Medical School, Ann Arbor, 1919. Licensed in California in 1919. Dr. Riggle was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✤

Wagner, Louise D. Died in Santa Barbara, April 2, 1952, aged 57. Graduate of Rush Medical College, Chicago, 1920. Licensed in California in 1921. Dr. Wagner was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Questions and Answers about C. P. S.

Question: Do any C.P.S. female employee members still have the old form of medical maternity benefits—i.e., where C.P.S. payment for the physician's service is not limited to $50.00?

Answer: Yes, a certain number of C.P.S members (indicated by Code 1 in the two-visit-deductible space on identification cards) do have maternity benefits which are not limited by the $50 indemnity. In the main, these members belong to the C.S.E.A. (California State Employees' Association) group or to one of the extended benefits groups. Necessarily, of course, they are female *employee* members. In these cases, the C.P.S. payment to the physician for his services (prenatal, delivery and postnatal) is $100, which constitutes full payment (except for the first two visits) for persons who are under the income ceiling. Balance charges may be made to persons who are over the ceiling.

For the great majority of female employee members, however, C.P.S. payment for maternity services is limited to $50 and this amount is intended as an allowance toward the physician's total fee. For these members, balance charges are permitted whether the member is under or over the income ceiling.

Question: What does C.P.S. mean by the term "contract year"?

Answer: A contract year, for C.P.S. purposes, constitutes one year from the original effective date of the member's enrollment and each succeeding twelve months' period during which the member maintains his membership in good standing; or it is one year from the date the member's coverage was converted from the old to the new C.P.S. contract and each succeeding twelve months' period of membership in good standing.

The date of the contract year is not necessarily the same for all members of a family. For example, an employee member may enroll a dependent at some date following the time when he joined C.P.S.

Question: How may the physician know to what extent a C.P.S. patient has utilized the yearly $25.00 and $10.00 allowances for x-ray and laboratory services, and also when the allowances will be renewed?

Answer: The following procedure has been established so that physicians will know the status of a C.P.S. patient's x-ray and laboratory allowances: When a physician member, who performs these services in his own office, submits his bill to C.P.S., he is sent a form which indicates (1) the amounts which will be paid by C.P.S.; (2) the amounts of the $25 and $10 allowances which remain; and (3) the date when the allowances will be renewed.

Question: What are the new "2827" forms and how do they affect the physician's handling of veteran cases under the Home Town Care Program?

Answer: The "2827" is a Veterans Administration form, which should be used whenever prompt treatment is not necessary. It is designed to supplant the C.P.S. Form 52 in new cases, i.e., veterans who apply for treatment of a service-connected disability for the first time, or old cases in which the veteran requests treatment from a new physician or has moved to his present location from another area. Form 2827 may be obtained by the veteran from the nearest VA office or from any County Veterans Service Officer.

When a request on the 2827 form has been received and approved by the VA, both the veteran and the physician (whose services have been requested by the veteran) are notified and a first authority for treatment is mailed to the physician. After issuance of the first authority, the case is handled routinely—i.e., there is no change in the monthly requests for continued authority (Form 53C), the billings (Form 53) or requests by telephone for amendments or emergencies.

In cases where prompt treatment is indicated, the physician should continue to use C.P.S. Form 52. Form 52 should also be used in rural districts where a trip to the nearest County Veterans Service Officer or VA office would create a hardship on the veteran.

Question: Two of my patients recently have asked me if C.P.S. members in good standing may continue their membership after reaching age 65. What is the answer?

Answer: C.P.S. does not cancel membership of members when they attain a certain age. Once a member has been enrolled, he may continue membership for life. The only reason C.P.S. membership is ever cancelled is because of non-payment of dues.

C.P.S. does observe certain underwriting rules which may prevent persons over 60 years of age from becoming members. But these rules have no effect on persons who have already enrolled.

Question: Are fees paid under the Veterans Program considered full fees, regardless of the veteran's income?

Answer: Yes. If the veteran is treated for a service-connected disability, the fee paid by the Veterans Administration (through the C.P.S.-VA home town care program) is the full fee, regardless of the veteran's income. Physicians are not permitted to make additional charges for any procedure authorized and paid for by the VA.

NEWS and NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

The 1952 **Cancer Conference** of the Alameda-Contra Costa Medical Association, in cooperation with the California Medical Association Cancer Commission and the California Division of the American Cancer Society, will be held the evening of Monday, June 16, in the Oakland Board of Education Building, Second Avenue and East Tenth Street. The program will begin at 8:15 p.m.

* * *

Dr. Herbert M. Evans, director of the Institute of Experimental Biology at the University of California, has been selected as the winner of the Passano Foundation award for 1952. The award, carrying with it a $5,000 prize, is made to encourage medical research, especially that which has clinical application.

* * *

Dr. Clifford Sweet, for 30 years chief of staff of Children's Hospital of the East Bay in Oakland, was honored by the medical staff there on May 21, 22, and 23, with the inauguration of the "Clifford Sweet Clinics and Lectureship." The event opened ceremonially with the unveiling of a new portrait of Dr. Sweet by Spencer Macky, president of the California College of Arts and Crafts in Oakland. The first lecturer was Dr. Irvine McQuarrie, professor and head of the department of pediatrics, University of Minnesota. It is planned to make the Sweet Clinics and Lectureship an annual event.

* * *

Dr. David Van der Slice, assistant director of health services for the Oakland public schools, was elected president-elect of the California Division of the American School Health Association at the annual meeting of the organization in Los Angeles in April.

MARIN

Dr. Charles D. Marple of San Rafael, assistant clinical professor of medicine at the University of California School of Medicine, recently was appointed medical director of the American Heart Association. Dr. Marple will administer the research policies and the scientific and physician education programs of the Association.

LOS ANGELES

Dr. Gordon E. Goodheart, for the past two years director of medical extension education at the University of Southern California School of Medicine, recently was appointed associate dean of the school.

* * *

Dr. Louis J. Regan and **Dr. Frederick D. Newbarr,** both of Los Angeles, recently were named to official positions in the American Academy of Forensic Medicine at the annual meeting of the organization in Atlanta. Dr. Regan, who holds degrees in both medicine and law and is legal adviser to the Los Angeles County Medical Association, was elected president of the academy, and Dr. Newbarr, head of the recently expanded department of forensic medicine at the University of Southern California, was appointed chairman of the academy's southwestern regional committee.

* * *

Appointment of **Dr. A. F. Rasmussen** as professor of infectious diseases at the University of California at Los Angeles School of Medicine was announced last month by Dr. Stafford L. Warren, dean of the School of Medicine. Formerly of the University of Wisconsin Medical School, Dr. Rasmussen will serve as chief of the division of virology.

SAN FRANCISCO

Dr. W. E. Carter, who recently retired as director of the outpatient clinics at the University of California Hospital, will speak on "Our Traditions" at the annual **Gold-Headed Cane Ceremony** of the School of Medicine. The ceremony will be held at 8 p.m. in Toland Hall, University of California Hospital, on June 18, 1952. Each year a gold-headed cane is awarded to the member of the graduating class who has shown the greatest interest in the welfare of his patients throughout his years in the School of Medicine. The award is designed to emphasize that the art of medicine is equally important in practice as knowledge of the science of medicine.

A similar cane is also presented to the physician selected to address the graduating students. This year, Dr. Langley Porter, former dean of the School of Medicine, will pass along to Dr. Carter the gold-headed cane he received as speaker at a previous ceremony. The senior student chosen by his classmates and the faculty of the Division of Medicine for his outstanding qualities will receive a cane from the hand of Dr. H. Donald Grant of Oakland, who won it some years ago.

SANTA CLARA

Dr. Charles L. Ianne was elected president and **Dr. Sydney Thomas** vice-president of the Santa Clara County Tuberculosis Association at the annual meeting of the organization in May.

GENERAL

Officers of the California Heart Association, elected April 30, 1952, are: President, Dr. Lewis T. Bullock, Los Angeles; vice-president, Dr. George C. Griffith, Pasadena; secretary, Dr. Arthur R. Twiss, Oakland; treasurer, Dan White, San Francisco. The board of directors for 1952-55 is: A. O. Altman, Los Angeles; Dr. Francis L. Chamberlain, San Francisco; Dr. James Dalton, Santa Barbara; Dr. William D. Evans, North Hollywood; Dr. Herbert Jenkins, Sacramento; Dr. Norman B. Leet, Oakland; Dr. Edgar Mauer, Los Angeles; Dr. Lowell A. Rantz, San Francisco; Dr. Edward C. Rosenow, Los Angeles; Dr. John J. Sampson, San Francisco; Gerald Stuttsman, Fresno; Ray Wiser, Berkeley; Dr. Richard Dickman, Bakersfield. Named to fill unexpired terms were Philip Landis and C. J. Haggerty, both of San Francisco.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE

Psychiatry and Neurology—The Langley Porter Clinic.

Date: August 25 through October 31, 1952, ten weeks, full time.

Fee: Fee for the course is $200.

The course is particularly designed to prepare psychiatrists and neurologists for taking the examinations of the American Board of Psychiatry and Neurology.

Conference on General Surgery—Toland Hall, University of California Hospital.

Date: September 8 through 12, 1952.

Fee: $75.00.

This course is offered for the purpose of stressing the newer concepts, methods of diagnosis, treatment, and techniques in surgery. Instruction will consist of didactic periods, panel discussions and actual *Operative Demonstrations*. Class limited to 50.

Ophthalmology—Toland Hall, University of California Hospital.

Date: September 15 through 20, 1952.

This is a course for specialists. Group instruction with demonstration of patients will be given twice daily.

Contact: Stacy R. Mettier, M.D., Head Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Postgraduate Courses for Practicing Physicians

Date: September 15-19, 1952.

All-Day Courses: Internal Medicine and Therapeutics; General Surgery and Surgical Anatomy; Cardiology.

Morning Courses: General Medicine; Fractures and Trauma to Soft Tissues; Obstetrics and Gynecology; Dermatology.

Afternoon Courses: Proctology; Pediatrics; Psychiatry; Arthritis and Rheumatic Diseases.

Fee: $75.00 for the combination of morning and afternoon course, or the all-day course (not covered by veterans' educational benefits).

Registration limited: Each physician may register for one morning and one afternoon course or one all-day course.

Contact: Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.

UNIVERSITY OF CALIFORNIA SCHOOL OF PUBLIC HEALTH

Health Aspects of Survival—A Workshop for Teachers and Students of Public Health—159 Forestry Building, University of California, Berkeley.

Date: June 23 to July 3, 1952.

Fee: $30.00.

The School of Public Health and the University Extension, with the cooperation of the California State Civil Defense Organization, offer teachers and students of health a Workshop. This year's session has been expressly designed to provide appropriate objectives and scientific materials for instruction of the general college and high school student. This undertaking has been endorsed by state departments of Education, Public Health, and Civil Defense in most of the Mountain and Pacific states. Two units of credit.

For further information write to the Department of Conferences and Special Activities, University Extension, University of California, Berkeley 4.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES SCHOOL OF MEDICINE

Symposium on Hypnosis

Date: June 25, 26, 27, 1952.

Fee: $50.00. Reduced fee $25 for students now working toward graduate degrees in psychology or psychiatry.

Chairman: Roy M. Dorcus, Ph.D.

Guest Lecturers: Milton H. Erickson, formerly Director Psychiatric Research and Training, Wayne County General Hospital; Associate Professor of Psychiatry, Wayne University School of Medicine, Detroit, Michigan; now, practicing Psychiatrist, Phoenix, Arizona.

Frank A. Pattie, Ph.D., Professor Psychology, University of Kentucky.

Frank Kirkner, Ph.D., Chief, Clinical Psychology, Veterans Administration Hospital, Long Beach.

Discussants: Lester F. Beck, Ph.D., James S. L. Jacobs, M.D., Seymour Pollack, M.D., James H. Rankin, M.D., Charles O. Sturdevant, M.D., Eugene Ziskin, M.D.

Contact: Thomas H. Sternberg, M.D., Head of Postgraduate Instruction, Medical Extension University of California, Los Angeles 24, California.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Internal Medicine—Course 830 — Los Angeles County Hospital.

Date: September 15, 1952 through June 1, 1953, full time.

Fee: Fee for the course is $750. Mail check to University of Southern California, School of Medicine, Department of Internal Medicine, Box 158, 1200 North State Street, Los Angeles 33. Course limited to eight students; applications will be accepted until July 15, 1952.

Intensive Review of Internal Medicine

Date: September 15 through September 26, 1952—8:30 a.m. to 12:30 p.m., Monday through Friday.

Fee: $50.00; applications accepted until August 1, 1952.

This course is offered for students preparing to take examination for the American Board of Internal Medicine.

Contact: Donald Petit, M.D., Assistant Professor of Medicine.

BOOK REVIEWS

URINE AND URINARY SEDIMENT — A Practical Manual and Atlas — Richard W. Lippman, B.S., M.D., Research Associate, Institute for Medical Research, Cedars of Lebanon Hospital, Los Angeles. Charles C. Thomas, Publisher, Springfield, 1952. 124 pages, 61 figures, 56 in color. $7.50.

As stated in the author's foreword, the principal original contribution of this monograph lies in the presentation of a number of photographic reproductions in color of the urinary sediment. These reproductions should prove highly valuable in the teaching of medical students and laboratory technicians, while more experienced microscopists would do well to examine the figures carefully for what might be thought of as a postgraduate correspondence course. The author also performs the badly needed service of bringing up to date the methods for performing the "Addis Count" in a simple fashion, and in general adheres to the methods and interpretations of Thomas Addis (with whom he worked). In addition, one finds both theoretical and practical information on proteinuria and many other urinary abnormalities; a large section is devoted to details of technique in virtually every test performed on urine in clinical laboratories. The monograph also contains systematic discussions of the formed elements in the sediment and of urinary findings in disease. The work should find a place in every laboratory of clinical pathology and school of medicine.

* * *

HUMAN BIOCHEMISTRY—3rd Edition—Israel S. Kleiner, Ph.D., Professor of Biochemistry and Director of the Department of Biochemistry, New York Medical College. 83 illustrations and five color plates. The C. V. Mosby Company, St. Louis, 1951. 695 pages. $7.00.

Kleiner's volume on Human Biochemistry appears to be an acceptable textbook of the subject on the undergraduate level. It is simple and direct in presentation. The text is arranged in the usual descriptive format with emphasis placed on the historical development and significance of the topics. The subject matter of the various chapters is introduced in a matter of fact manner without adequate reference to basic biologic and clinical principles. The chapters dealing with applied biochemistry, especially in regard to the physiology of digestion, vitamins and foods, are good. There is an excellent chapter on the composition and nutritive importance of milk. The chapters on mineral metabolism and the urine constitute excellent introductions into the subject matter of these two important phases of biochemistry. The section on blood, as well as that on hormones, could have been broadened with profit. Some of the illustrative clinical material could have been deleted with advantage. The bibliography appended to each chapter is relatively complete. On the whole the book is commendable for the purposes of the author.

* * *

SPATIAL VECTOR ELECTROCARDIOGRAPHY — Clinical Electrocardiographic Interpretation — Robert P. Grant, M.D., and E. Harvey Estes, Jr., M.D. The Blakiston Company, Philadelphia, 1951. 149 pages. $4.50.

This original and interesting book presents a clinical method for interpreting in vector rather than scalar form the standard and unipolar electrocardiographic leads customarily used today. The coverage of the subject is not meant to be complete—only the normal and certain abnormal conditions of the ventricles are discussed. The introductory chapters are concerned with explaining in a general way the application of vector principles to the electrical activity of the heart. The authors have carefully avoided highly technical terminology and have succeeded in presenting their material in an unusually well-written, simple style. The interrelations between the standard and unipolar limb leads and the feeling for the three-dimensional quality of the heart's electrical field are particularly well expressed. The unwary might have difficulty in separating fact from hypothesis at times due to the simple dogmatic style which contributes so much to the clarity of the presentation. There are several warnings about this in the text itself, however.

The method recommended for the actual interpretation of electrocardiograms is not such a happy proposition, unfortunately. The present method involves over-simplifications which lead to serious inaccuracies. The interpretations are mainly based on the determination of the spatial orientation of "mean QRS and T vectors." These mean spatial vectors are determined by a method which is reliable only when the corresponding actual vectorcardiographic QRS and T loops are roughly elliptical in shape with the isoelectric point quite near one end of the ellipse. Frequently this is not the case, particularly with abnormal loops, but one cannot readily determine the existence of this condition just from studying the electrocardiogram. To discover it one must resort to actual vectorcardiography or to the same tedious plotting methods which have spoiled the clinical usefulness of previously published methods for deriving vectorcardiograms from electrocardiographic leads.

It is very unfortunate that the authors did not check their findings against the results of actual vectorcardiographic study of their case material before publishing this book. They might have avoided such pitfalls as the omission of the important concept that not only the stressed "dead zone 0.04 vector" is important in the detection of myocardial infarction but that significant spatial shifts of the entire QRS loop occur, the rather incomplete and somewhat inaccurate discussion of the differentiation of left ventricular hypertrophy from left bundle branch block (p. 73), and the unsatisfying explanation offered for the "isolated T negativity" phenomenon (p. 47). In explaining the last, the authors suddenly abandon all the vector theory they had previously expounded; one wonders if the phenomenon doesn't result merely from the existence of a non-elliptical T loop. The precordial leads are used without much allowance being made for the fact that they do not lie strictly in the horizontal plane and lie at different distances from the heart. As a result, the increased voltages found in these leads are uncontrolled, the closer areas of the heart being unduly represented. Because of this one must remember that the spatial angle data presented cannot be compared precisely with information derived from actual vectorcardiography.

Nevertheless, much of what was written seems sound, and the many practical applications of vector principles are thought-provoking and enlightening. The book is a fecund source of ideas that deserve further experimental exploration. In summary, the book can be highly recommended as one of very few lucid, non-technical expositions of the application of vector principles to the electrical activity of the heart; as a clinical method for assisting in the interpretation of electrocardiograms it has considerable merit but too many faults to be generally useful. Those interested in investigating this aspect of the subject further would probably do better to turn to vectorcardiography.

CLINICAL ALLERGY—A Practical Guide to Diagnosis and Treatment—Second Edition—Samuel J. Taub, M.D., F.A.C.P., Professor of Medicine, and Chairman of the Department of Allergic Diseases, Chicago Medical School. Paul B. Hoeber, Inc., 49 East 33rd St., New York, 1951. 276 pages. $4.50.

Succinct discussion of the immunochemistry of allergy, the nature of antibodies, antigens, and haptens, the mechanism of the hypersensitive reaction and the results and location of the antibody-antigen cellular reaction, are in the first four quite brief chapters of this book.

Discussion of inhalant and, to a lesser extent, food allergies follows. Methods of diagnosis and treatment are outlined. More consideration of the negative skin reaction in pollen and especially in food-sensitive patients would be helpful. The student must know, moreover, that pollen-sensitive patients may give reactions due to past or potential allergy, or to non-specific substances in the extracts, or may give no reactions to important allergenic pollens. In the latter case, the conjunctival test is advised which also may be negative. The choice of pollens for treatment needs additional discussion, depending as it does primarily on the patient's history correlated with the pollination seasons and secondarily on the skin reactions obtained.

In the section on the diagnosis and treatment of perennial nasal allergy, bronchial asthma, and atopic dermatitis, major attention is given to inhalant allergy including that to pollens, animal emanations, miscellaneous inhalants, and house dust. There is special emphasis on cottonseed as an inhalant. The open mind about allergens in cottonseed and other vegetable oils is approved by this reviewer. Such allergy is interestingly stressed in atopic dermatitis, possibly from the author's experience before the last war. Fungus inhalant allergy is considered with approved reserve.

Many allergists will be disappointed in the information about food allergy. The frequency of food allergy in patients with negative skin tests could be emphasized. Although those negative tests are noted, food allergies in summarized cases are only determined by skin testing, especially by the fallihle intradermal and in one case by the passive transfer method. There is insufficient consideration of food allergy in atopic dermatitis, allergic headaches, gastrointestinal allergy, joint and urogenital allergy, and the quite common allergic toxemia. The trial diets in the appendix detail recent elimination diets of Rowe. References to them in 1944 and 1950 would be more helpful than the original reference in 1928. And throughout the book, references to important texts and previous and recent contributions profitable for the student to read and refer to would be important.

* * *

RELATION OF PSYCHOLOGICAL TESTS TO PSYCHIATRY. Edited by Paul H. Hock, M.D., New York State Psychiatric Institute; College of Physicians and Surgeons, Columbia University; and Joseph Zubin, Ph.D., New York State Psychiatric Institute, Department of Psychology, Columbia University. The Proceedings of the Fortieth Annual Meeting of the American Psychopathological Association, held in New York City, June 1950. Grune and Stratton, New York, 1952. 301 pages. $5.50.

It would be very nice indeed if there were a readily available source of information to the physician as to what he could expect in the way of useful information when he sends his patients for psychological tests. This book is not, however, the answer to this need. Rather it is the proceedings of the 1950 meeting of the American Psychopathological Association. As such, it should be of interest to the specialist in psychiatry, but since the work reported is now two years old one would rather suspect that it was already known to the workers in this field. It is not a book that would be helpful to the uninitiate.

MONOGRAPHS ON SURGERY—1952. B. Noland Carter, M.D., Ph.D., Editor, Professor of Surgery, University of Cincinnati. The Williams and Wilkins Company, Baltimore, 1952. 430 pages, $12.50.

This is the third volume of "Monographs on Surgery" and represents the changing policy from Nelson's Loose Leaf Surgery with yearly supplements to a series of monographs on timely subjects each year. If one saves these monographs, which are published in book form, an up-to-date series of articles, each well done by an expert in the field, will be available as a reference source to the surgeon rather than the previous systems of surgery. Necessarily the scope of each book of monographs must be rather diversified, and this is true of the present volume.

There are essentially sixteen excellent articles in monograph style in this present volume. Six of the articles deal with a symposium on Urinary Incontinence in the Female, and each of them is admirably written and illustrated by an expert. The orthopedic section comprises four articles: one on internal fixation of fractures of long bones, another on intrascapular fractures of the femoral neck, a third on aseptic necrosis of the femoral head, and a fourth on arthroplasty. There are two articles on urology: (1) congenital pelvic and ureteral dilatation, and (2) renal neoplasms. The remaining articles are devoted to surgery of the large arteries, operation (for neoplasms) of the pancreas, management of acute chest injuries, and radioactive iodine in the diagnosis and treatment of thyroid disease.

With surgery divided into the specialties, and with the content of the monographs being of a character to appeal to a specialist rather than to a general practitioner, it is unlikely that any one surgeon will be interested in all the articles contained in the present volume. Depending upon one's surgical inclinations, therefore, the articles will prove excellent or useless. One wonders if it might not be advisable from the standpoint of the practicing surgeon to have each yearly monograph be a symposium in a given specialty, following the lines more or less adhered to in everyday practice of surgery. For a total of sixteen articles two specialties might be included, such as orthopedics and neurosurgery, or chest and vascular surgery. With the present contents the publishers theoretically hope to sell more books to a wider variety of surgeons, but one must wonder if it does not result in fewer surgeons buying the volume, and accordingly, permitting a series of excellent articles to pass unstudied and unread by the specialists who are seeking such material in their respective fields.

If the scope of the table of contents appeals to your interests in surgery the present "Monographs in Surgery" is worth securing for your library. The book is excellently printed and illustrated and the articles are excellent.

* * *

CLINICAL PRACTICE IN INFECTIOUS DISEASES—For Students, Practitioners and Medical Officers. E. H. R. Harries, M.D., Lond., F.R.C.P., Formerly Medical Superintendent Infectious-Diseases Hospitals Service, London County Council; and M. Mitman, M.D., Lond., F.R.C.P., Consultant Physician and Medical Superintendent, River Hospitals, Joyce Green, Dartford. Fourth Edition. The Williams and Wilkins Company, Baltimore, 1951. 717 pages. $6.50.

Harries and his associates have prepared an excellent textbook containing sound descriptions of the communicable infectious diseases. They are probably not better than those to be found in any standard American textbook of medicine or pediatrics. Management of the various disorders is considered within the setting of British use of antimicrobial agents and public health regulations. For this reason the book will be of very little value to students and physicians in this country.

STANDARD NOMENCLATURE OF DISEASES AND OPERATIONS — Fourth Edition. Richard J. Plunkett, M.D., Editor, and Adaline C. Hayden, R.R.L., Association Editor. Published for the American Medical Association. The Blakiston Company, Philadelphia, 1952. 1,034 pages. $8.00.

"Standard Nomenclature of Diseases and Operations" appeared in its fourth edition in January 1952. The work has been expanded to include a 187-page appendix which attempts to correlate the "Standard" diagnoses and code numbers with diagnoses and code numbers of the "International Statistical Classification of Diseases, Injuries, and Causes of Death." The International list numbers have been inserted parenthetically throughout the body of the book and by reference to the appendix the code numbers of the two systems may be cross-indexed.

Sections on tumor classifications, on diseases of the hemic and lymphatic systems, and psychiatric diagnostic terminology have been broadly revised under competent editorship in the light of newer knowledge.

The Supplemental Terms lists do not in this edition follow directly after the categories they subserve but are grouped together in one section. Most of these lists have been increased and improved. A notable exception is the list of Supplemental Terms of the endocrine system.

The list of eponymics has disappeared as such and these now appear in the general index of nomenclature. This is a more handy arrangement. The familiar names of Henoch and Schönlein have said farewell as well as Felty's syndrome. Eisenmenger's syndrome appears for the first time along with Chiari's, Letterer-Siwe's, and Brill-Symmers.

There are several examples of improved proofreading. Déjerine has throughout now acquired its acute accent, "Monckberg" has found the additional *e* it needed, and "Friederichsen" of Waterhouse-Friderichsen has lost the *e* it did not need. But although Fröhlich is now Froelich, Köhlers is still Köhlers.

If it becomes necessary in the future to expand this book once more, it is suggested that the present appendix be made into a separate volume. The book is maximally large now for handy desk reference and few of those who use it frequently have need for reference to the International classification.

* * *

UROLOGICAL PATHOLOGY. Peter A. Herbut, M.D., Professor of Pathology, Jefferson Medical College, and Director of Clinical Laboratories, Jefferson Medical College Hospital, Philadelphia. Lea & Febiger, Philadelphia, 1952. Two volumes, 1,222 pages, 527 illustrations, two in color. $24.00.

This long (1,222 pages in two volumes) work is more a pathologist's summary of the whole field of urology than (ideally) an exhaustive description of the anatomic and pathologic changes in urologic disease. Half the space is given up to non-critical review of the literature of the last 25 years and too little is devoted to anatomicohistologic detail, which has been available only in German works. The clinical material (better covered in standard texts) could profitably be replaced by presentation of the physiologic-biochemical implications and correlations of the pathologic processes.

The fourteen chapters deal successively with the various organs of the urinary and genital tracts, a convenient arrangement for the practicing doctor but entailing some repetition and making the interrelationships less distinct (as for instance in obstructive disease which often affects the tract as a whole). Each organ is discussed completely and the references will be valuable.

These volumes are recommended only as a reference work for most students and physicians, but would be a worthwhile addition to the libraries of the studious urologist.

TONSIL AND ALLIED PROBLEMS. Roy H. Parkinson, M.D., F.A.C.S., Chief of Eye, Ear, Nose and Throat Department, St. Joseph's Hospital, San Francisco. The Macmillan Company, New York, 1951. 432 pages. $12.00.

The need for an up-to-date text on the tonsils and adenoids seems obvious when it is considered that, as the author states in the introduction, "There are more tonsillectomies performed than any other operation known," and that many years have elapsed since the appearance of a complete treatise on the subject.

The anatomy, embryology and histology of the tonsils and of the adjoining tissues are given, including well detailed descriptions of the musculature of the throat, the potential spaces around the tonsils, the adenoids, the blood supply and the nerve supply.

All known diseases of the tonsils are discussed, together with their diagnosis and treatment.

The chapter on indications for tonsillectomy is concise yet complete. The author rightly decries the promiscuous removal of all children's tonsils. He believes the tonsils definitely can constitute a focus of infection, but that such is not so frequently the case as has been thought in the past.

The technique of tonsillectomy and of adenoidectomy is treated at length. All methods are described, together with the author's modifications based on his many years' experience and on many thousand cases. In his opinion, however, the choice of technique is not important so long as the tonsils are completely removed without injury to the musculature, particularly to the pillars of the fauces.

Postoperative care is discussed fully. The author's postoperative liquid medication seems better than aspirin (plain) although he states he never has observed aspirin to cause bleeding.

Postoperative complications are well covered with exception of sudden death during or immediately after operation. Although rare, deaths do occur. In the reviewer's opinion a desirable addition would be a detailed account of the causes of such deaths.

This book has been designed to aid not only the general practitioner but also the specialist. It is well written. The easy, simple style makes its reading a pleasure. The illustrations, 250 in number, are excellent and depict all points covered in the text. Its perusal is worth the time of anyone interested in the tonsil problem. The physician starting in this field should consider this text "required reading." The specialist would do well to add it to his reference library.

* * *

SERUM SICKNESS. C. Frh. von Pirquet, M.D., and Bela Schick, M.D. Translated by Bela Schick, M.D. The Williams and Wilkins Company, 1951. 130 pages. $3.50.

Immunologists, allergists, and all physicians with an interest in the history of their profession will be delighted that this great monograph has at last been translated into English by one of the authors. It is inconceivable that 46 years could have been allowed to elapse before this was accomplished.

The modern concept of the role of allergic reactions in the causation of human disease may be said to have been conceived in the mind of von Pirquet. Little has been added to the clinical observations, experimental results, and theoretical considerations set down in this book.

The rapid disappearance of the acute infectious diseases as a cause of human disability has brought into prominence a large group of disorders in which inappropriate immunologic reactions probably are important in pathogenesis. Notable examples are rheumatic fever and periarteritis nodosa. The enquiring physician might well begin his consideration of this subject by reading "Die Serumkrankheit" in this excellent translation.

CALIFORNIA MEDICINE

Index to Volume 76, January-June, 1952

KEY TO ABBREVIATIONS USED

(Or.)—Original Article
(Ed.)—Editorial
(CMA)—California Medical Association
(CR)—Case Report
(I)—Information
(LE)—Letters to the Editor

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